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ORIGINAL ARTICLES.

SHALL ABSORBABLE OR NON-ABSORBABLE LIGATURES AND SUTURES BE EMPLOYED IN HYSTERECTOMY AND SALPINGO-OOPHORECTOMY?[1]

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THE solution of the question as to whether absorbable or non-absorbable ligatures and sutures shall be used in abdominal surgery must be sought in the practical experience of the active workers in this field. Theoretical considerations are of value, but are of minor importance in comparison with practical results, and this is especially true in a subject so well worked out as that under consideration. To make my contribution to this discussion as concise as possible I shall confine my remarks largely to my personal experience and to the considerations which have influenced me in my choice of suture and ligature material in the past.

During the first eight years of my work in abdominal surgery I employed non absorbable ligature and suture material, that is, silk and silkworm gut, exclusively. During the last few years catgut has been used more and more, and non-absorbable materials relatively less. My own results with non-absorbable ligature and suture material have been excellent. The usual objections to the use of silk ligatures are that the silk is liable to become infected and to form the focus of an intraperitoneal abscess, or to be the cause of intraperitoneal sinuses. The percentage of cases in my hands in which intraperitoneal abscesses or sinuses were due to the use of silk ligatures was extremely small, and for a number of years it was confined exclusively to an extreme class of cases of pelvic suppuration in which gauze drainage was employed. The last case of ligature sinus in my experience dates back more than three years.

To secure the best results with silk ligatures, certain definite principles must be followed. The silk ligatures must be sterile. This has been accomplished by the method of fractional repeated sterilization. The ligature silk must be fine. This I consider a *sine qua non*. If heavy pedicle ligature is employed, abscesses about the pedicle and ligature sinuses are inevitable in septic cases. This is partly due to the fact that it is more difficult to encapsulate heavy ligature than fine ligature, and not less to the fact that the temptation to include large masses of tissue in the ligature is irresistible when heavy silk is employed. If fine silk is used, it is essential to include only a small amount of tissue in the ligature, as otherwise the ligation is insecure. The devitalization of large masses of tissue by heavy ligatures and the difficulty of encapsulating these ligatures, explain the relative frequency of pedicle abscess and ligature sinuses when this method is employed. The use of fine silk, the ligation of small masses of tissue, and careful toilet of the peritoneum, including a careful washing of the pelvis with salt solution as the final step in the operation, will ensure a minimum percentage of pedicle abscesses and ligature sinuses when silk is employed. The question of drainage also has a definite relation to the infection of silk ligatures. Pedicle abscesses and ligature sinuses were more common in the old days when drainage was frequently employed. The use of the Trendelenburg posture, the protection of the intestines from infection by covering them with gauze, thorough hemostasis, and an intelligent toilet of the peritoneum, including washing of the pelvis with salt solution, have enabled us to abandon drainage in all but the most exceptional cases. This improvement in technic greatly lessens the liability of silk ligatures to infection.

Mention has already been made of the fact that the cases which usually yield pedicle abscesses or ligature sinuses were those of extensive pelvic suppuration. Non-absorbable ligatures gave trouble in another way in a different class of cases—hysterectomies when the cervix was amputated at or below the internal os. In these cases in the beginning I used silk ligatures for the uterine arteries and silk sutures to close the cervical stump. These sutures and ligatures gave no trouble for a time after operation, but in a number of cases the sutures in the cervix became infected from the cervical canal, and some weeks or months later caused cellulitic deposits or ligature sinuses in or about the cervix. My own experience in this class of cases was that of others, and showed the necessity of abandoning non-absorbable sutures about the cervix in hysterectomy.

[1] Read in the discussion on "Should Non-absorbable Ligatures Be Discarded in Gynecological Surgery?" at the Twenty-third Annual Meeting of the American Gynecological Society, held at Boston, May 24, 25, and 26, 1898.

My own use of silk as a ligature material was partly due to early training, and partly to the fact that the general results of those who used silk as ligature material appeared to be better than those who championed the cause of catgut, the inference being that infection from the use of catgut was the cause of this apparent difference in results. The older methods of preparing catgut would not stand the test of a bacteriologic examination, and so long as this was the case it did not seem to me that one could conscientiously make use of catgut within the peritoneal cavity. With the introduction of reliable methods for the sterilization of catgut, this objection ceased to exist, and I gradually made use of it as an adjuvant to silk, both as ligature and suture material in the peritoneal cavity. As silk had occasionally given trouble in suppurative cases and in hysterectomies, catgut was employed for ligatures and sutures about the cervix in this class of cases. Not trusting it wholly, in addition to the ligation with catgut, fine, silk ligatures were applied to the isolated ovarian and uterine arteries. This was done in septic cases after the washing out of the pelvis, and in none of these cases has the fine silk ligature given trouble. With the substitution of catgut for silk to close the cervical stump in hysterectomy, post-operative inflammation about the cervical stump ceased to exist. It is an interesting clinical fact that not a single abscess about the stump of the cervix has occurred among my hysterectomy cases. Secondary ligature sinuses about the cervix occurred in a few of the early cases, but since the adoption of catgut this complication has entirely disappeared.

I next substituted catgut for silk in sewing the peritoneal flap over the stump in hysterectomies, and in closing the peritoneal layer of the abdominal wound. Increasing experience added to my confidence in catgut, and gradually it has been substituted for silk as a ligature material in my abdominal work. At the present time it is the routine ligature material in my work, and it is my expectation that silk will be abandoned for this purpose. I still employ silk in appendicitis operations, to suture the bowel, and for other special indications, but believe that even this field for its employment will be narrowed in the future.

My experience with non-absorbable sutures in closing the abdominal wound has been large. In my earlier work the old method of through-and-through sutures of silk or silkworm gut was employed. This method was abandoned because of its imperfections, and especially because of the relative frequency of hernia resulting from it. In May, 1892, I began the use of tier sutures, using silkworm gut as the material for the buried sutures.[1] The first method employed was the use of interruptured sutures of silkworm gut, introduced through the aponeurosis of one side, through the rectus muscle and the peritoneum, and in a reverse way through these structures on the other side of the wound. These sutures were tied and cut off, and remained permanently buried in the abdominal wall. The remaining portion of the wound in the subcutaneous fat and skin was then closed with interrupted silkworm-gut sutures. At a later period, instead of this superficial row of silkworm-gut sutures, a continuous catgut suture was employed to close the cellular tissue, and an intracuticular catgut suture to close the skin. In 1897 I adopted a new method of closing the abdominal wound, and in a paper, entitled "A New Method of Suturing the Abdominal Wall in Celiotomy"[2] described the technic of this method, and also reported and discussed my experience with buried permanent sutures in celiotomy incisions, Alexander operations, and femoral and inguinal herniotomy. At that time, buried permanent sutures had been employed in 365 operations, with 8 suppurations. Since that date 107 patients have been operated upon, with two suppurations, making a total of 472 cases, of which 10 suppurated, or 2 per cent. Of these cases subsequent hernia has developed in two. In one, the original operation was done for a large umbilical hernia in a large fleshy woman. More than a year later, during an attack of the grippe, the line of union gave way. This is the only hernia which has come to my notice among the cases in which primary union was obtained, 462 in number. Of the 10 cases in which suppuration took place, one hernia has developed. The operation was done in this case for tubercular pyosalpinx and tubercular peritonitis. The abdominal wound suppurated, and the buried sutures were removed. This patient subsequently developed a hernia, and later died of phthisis.

What becomes of the buried permanent sutures in cases in which primary union is obtained, is the question of greatest interest. After employing silkworm gut as a buried permanent suture for six years I have still to make the report that they remain permanently buried in the tissues. Not one of these patients has reported to me that the buried sutures have caused suppuration, and although I have made careful inquiry among my confrères in Philadelphia, I have learned of no case in which this accident has occurred. Both from the stand-

[1] "Remarks on the Use of the Buried Permanent Suture in Abdominal Surgery," *Amer. Gynec. and Obstet. Jour.*, December, 1896.

[2] *Amer. Jour. of Obstet.*, vol. 35, No. 4, 1897.

point of obtaining primary union, and from that of preventing hernia, this method of closing the abdominal wound leaves little to be desired. The objection to the method is the length of time which it consumes. Depending upon the length of the wound, it requires from ten to twenty minutes, or even longer. This is a real objection to the method, and may induce me to adopt chromicized catgut to close the muscles and fascia. I believe this would give admirable results, especially if the principle of overlapping the fascia recommended by me were adopted.

Silkworm-gut buried in the abdominal wall seldom gives rise even to the slightest irritation. Shortly after operation I have known patients to complain slightly of irritation about the sutures, which, however, invariably subsided. In the Alexander operation, however, a number of patients have complained of pain greater or less in character in the inguinal canals, which persisted for a long time. In one patient, a highly neurotic woman, I cut down upon one canal and removed the buried sutures, after which the patient ceased to complain. This patient knew of the presence of the buried sutures, and, therefore, there is some question as to whether the removal of the sutures had a local or mental effect. In this operation I have abandoned the interrupted silkworm-gut suture, and adopted the continuous chromicized catgut suture as recommended by Edebohls.

My contribution to the discussion would be incomplete without some remarks upon the character and preparation of catgut, and the advantages and disadvantages of this suture material for ligatures and sutures in abdominal surgery. Having tried various methods of selecting catgut from that furnished by the instrument-dealers, and that by commercial houses for use in the Arts, for some time I have confined my purchases to that furnished by a New York manufacturer. It is very difficult to obtain catgut in which the standard of size is maintained. Most of the commercial catgut which I have been able to obtain has been very defective in this respect. Much of it also has been of little strength. The catgut already mentioned has proven fairly satisfactory in every way.

The cumol method of sterilization has been adopted, and has proven very satisfactory. If the process is carried out by a competent person, the results are very uniform, and the catgut is even stronger than before sterilization. It has the advantage also that it ties well, and that it is not spoiled if it comes in contact with water. This is especially valuable when catgut is used in plastic work, as it can be used with constant irrigation of the field of operation. Apparently the cumol has the additional effect of lengthening the time necessary for the absorption of the catgut. When chromicized catgut is employed, the method recommended by Edebohls has been followed up to the point of chromicizing and drying the catgut. It is then put through the process of sterilization by the cumol method. The cumol method has stood the test of bacteriologic examinations, and in my hands the very satisfactory clinical test that after having used it for several years I know of not a single case of infection or suppuration which has followed its use. These considerations strongly recommend this method for the sterilization of catgut. The objections to the method are that it is somewhat expensive, and that to prepare a lot of catgut requires the undivided attention of a competent person for a number of hours.

The objections formerly urged against catgut were that it was a source of infection, and that it did not afford security against secondary hemorrhage. The first objection can no longer be urged, because at the present time several reliable methods for the sterilization of catgut are well known. Hence, the second objection only need be considered. The long continued and increasing use of catgut by such men as Boldt, Edebohls, A. P. Dudley, Gordon, Mann, and Kelly in this country, and Martin, Olshausen, and Zweifel in Germany, not to mention others, is a practical answer to the assertion that catgut is an unreliable ligature material. So far as I know, every one who has had extensive experience with catgut not only continues to use it, but is broadening the field of its application. So far as my own individual experience is concerned, in not a single case have I seen hemorrhage, either primary or secondary, in which catgut was employed. It is well known, however, that secondary hemorrhage has taken place after the use of catgut, and it is a very practical question how most surely to prevent this serious accident. Some time ago a fatal secondary hemorrhage from the uterine artery occurred in Kelly's service at Johns Hopkins Hospital on the seventh day after the use of catgut. In this case, apparently after the absorption of the catgut ligature, the thrombus in the vessel was forced out by arterial pressure. Wishing to know the experience of some of those who have made large use of catgut from the standpoint of secondary hemorrhage, I wrote to Drs. Boldt, Dudley, and Edebohls. Dr. Boldt states that he uses catgut exclusively in all abdominal work except for suturing the intestines. He takes no precautions in tying the knot, except "to make three loops instead of two

as in the case of silk." Some seven or eight years ago he had a death from secondary hemorrhage, due to the slipping of a mass ligature of catgut, and another case about two and a half years ago. Since then he has discontinued the use of mass ligatures, and ligates each vessel separately, using very fine catgut. He states that in both the cases of hemorrhage only a double knot was made instead of a treble knot. Dr. Dudley states that he makes general use of catgut in his hysterectomies, and has done so for years; in fact, catgut is his routine suture and ligature material in all his work. He has no cases of secondary hemorrhage to report. He always ties three knots, and leaves at least half an inch of free catgut beyond the knot. Dr. Edebohls states that he has always been an advocate of catgut in abdominal surgery, and that he used silk only in his first three or four celiotomies. Subsequently he used catgut exclusively except in intestinal surgery, and now he uses catgut even for this purpose. He has no cases of secondary hemorrhage to report. The method of tying the knot is to make a single loop in the first tie, and a double loop in the second. The knot is described on page 10 of his article "What Is the Best Method of Making and Closing the Celiotomy Incision?" published in the *American Gynecological and Obstetrical Journal* for May, 1896.

The foregoing indicates that the risk of secondary hemorrhage from the use of catgut as a ligature material is slight, and that it may be reduced to a minimum by the intelligent use of ligatures. Undoubtedly the ligation of the isolated vessels affords the greatest security against secondary hemorrhage. The method which I have followed is first to use relatively light catgut as mass ligatures, and subsequently to place individual ligatures upon the separate vessels. In this way time is saved in the operation, and equal security is assured. Until very recently fine silk has been used for the ligation of the individual vessels, but it is my intention to substitute catgut for this purpose. In tying catgut I make a triple knot invariably, and in either the second or third tie make use of a double instead of a single loop. The free end of the ligature is cut off about a third of an inch from the knot.

Having considered the supposed objections to the use of catgut, it remains to mention the real advantages of this material. In my own experience non-absorbable sutures and ligatures have given almost no trouble. I have adopted catgut in the hope that it will give no trouble at all, and thus eliminate even the small percentage of ill results formerly encountered. We should at least aim at the ideal, especially if in doing so we lose no practical benefit by change in technic. It is certain that with care and intelligence intraperitoneal abscesses and intraperitoneal sinuses due to silk as a ligature material will seldom be met with; but with catgut as a suture material, if suppuration does take place, it is a satisfaction to know that the healing of the abscess or sinus will not be delayed until the sutures are discharged.

For the expert who has every facility at his command which the modern hospital affords, I think there can be no question that the absorbable sutures and ligatures offer distinct advantages over the non-absorbable. For the occasional operator, I question very much whether this is true. He is not likely to have a supply of sterile catgut, nor the facilities to sterilize it. His relative inexperience also in applying ligatures puts him at a disadvantage in using catgut, as undoubtedly more skill and patience is required to properly secure catgut ligatures than silk ligatures, therefore, except for the expert I am inclined to believe that sterile silk will give better results than catgut.

FORCIBLE STRAIGHTENING OF SPINAL CURVATURES.[1]

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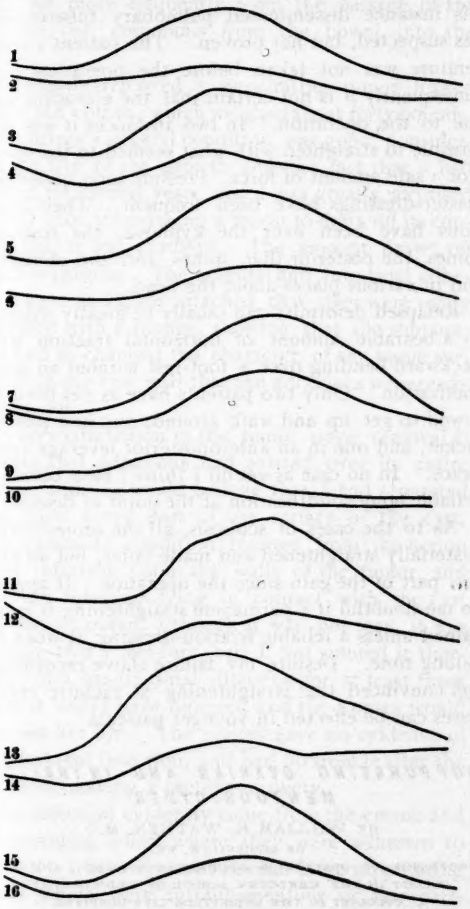
THE immediate straightening of spinal curvatures by the use of considerable force is not a new procedure. Two thousand years ago the method was so old that the name of its author had been forgotten. The only new thing in its revival is that the patient is profoundly anesthetized during the operation. I made my first attempt at forcible straightening of the spine with the patient fully anesthetized on June 23, 1897. Since that time I have made the attempt in every case coming under my observation in which it seemed to me admissible, and in which, after fully explaining the operation and its results to the parents, permission to operate could be obtained. I think I have learned some things from personal experience, but there are still several points upon which I feel in more or less doubt, and it is these that I would be glad to have discussed. As to spondylitis: (1) Is there any risk to the patient except dissemination of tubercle and death from general tuberculosis or tubercular meningitis? (2) What additional percentage of risk is there from dissemination of tubercle? (3) Does the presence of demonstrable abscess or of a sinus add to the risk? (4) How much of a relapse, or return, of deformity must we expect during the subsequent treatment by recumbency and fixation-

[1] Read at the Twelfth Annual Meeting of the American Orthopedic Association, Boston, May 18, 1898.

dressings? (5) What are the best fixation-dressings during recumbency, and afterward? (6) Can we reasonably expect the gap between the carious bone surfaces produced by the operation to fill in and solidify with bony material so that relapse of deformity after the healing of the tuberculous process will not take place? (7) Will the period of treatment be prolonged or shortened by the operation, and about how long will that period be? (8) Is the use of an anesthetic an advantage or a disadvantage? As to



scoliosis: (1) Is there any risk in forcible straightening? (2) What degree of gain may reasonably be expected? (3) Can the gain from forcible straightening be maintained? As to rachitic curvatures: What may we reasonably expect from forced straightening?

On October 5, 1897, I read a paper on this subject before the Mississippi Valley Medical Association at Louisville, Ky., reporting the cases of the patients operated upon by me up to that time. The paper was not published, but was emended and amplified and again read on December 23, 1897, before the Chicago Medical Society. It was published, in abstract, in the February number of the *Chicago Medical Recorder*, and in full in the *Journal of the American Medical Association*, March 26, 1898. Altogether I have attempted the operation in 16 cases of spondylitis, 7 cases of scoliosis, and 1 case of rachitic curvature. One case reported in my October and December papers as scoliosis, and included here among the seven cases of scoliosis, I am inclined to regard as spondylitis because the mother died of tuberculosis; because the deformity, though lateral and posterior, was very great for so short a duration as two years; because the sensations communicated to the hands of the operator during the straightening were identical with those felt in straightening spondylitis and quite different from that in the cases of undoubted scoliosis; and because of the utter helplessness of the patient when the jacket was removed on account of an attack of typhoid fever eight months after the straightening.

I will not enter into the details of the cases already published, but those since December 23, 1897, are as follows:

CASE I.—Female, six years old. Spondylitis; duration two years. Family history negative. Onset preceded by traumatism. Previous treatment various. Tracing No. 1 shows deformity present. There was an old sinus in the left loin. On December 28, 1897, the spine was straightened, as shown in tracing No. 2, and a plaster-jacket put on during horizontal traction.

CASE II.—Male, ten years old. Spondylitis; duration seven years. Family history negative. Onset preceded by traumatism. Previous treatment by anteroposterior spine brace. The deformity present is shown by tracing No. 3. There was an undescended psoas abscess. On January 6, 1898, the spine was straightened, as shown by tracing No. 4, and a plaster-jacket was put on during horizontal traction.

CASE III.—Male, six years old. Spondylitis; duration more than nine months. Family history negative. Onset preceded by traumatism. Previous treatment by an ill-fitting steel brace. The deformity present is shown by tracing No. 5. On January 8, 1898, the spine was straightened, as shown by tracing No. 6, and a plaster-jacket was put on during suspension by the feet.

CASE IV.—Female, ten years old. Spondylitis; duration four years. Family history negative. Onset preceded by traumatism. Previous treatment by plaster-jacket for six months, when paraplegia came on; then recumbency and horizontal traction by weight and pulley for one year until the paraplegia had passed off; then anteroposterior spine-brace with chin support. The deformity present is shown by tracing No. 7. There was complete motor and partial sensory paraplegia, and the feet and legs were cold and blue. On January 18, 1898, the spine was

straightened, as shown by tracing No. 8, and a plaster-jacket including the head was put on during suspension by the feet. Immediately after recovery from the anesthetic the patient was able to move the limbs, and after twenty-four hours the sensation, color, and temperature of the limbs were normal. There was partial relapse of the paraplegia for which a second operation was performed on February 24, 1898, since which time there has been no paraplegia.

CASE V.—Male, thirteen years old. Spondylitis; duration eight years. Family history negative. Cause unknown. Previous treatment various. The deformity present is shown by tracing No. 9. There was an undescended psoas abscess on each side. On April 13, 1898, the spine was straightened, as shown by tracing No. 10, and a plaster-jacket was put on during horizontal traction.

CASE VI.—Female, five years old. Spondylitis; duration about two years. Family history negative. Cause unknown. Previous treatment by an ill-fitting steel brace. The deformity present is shown by tracing No. 11. The patient had had cough and indigestion for about two months. Uncertain diagnosis of pulmonary tuberculosis. On April 14, 1898, the spine was straightened, as shown by tracing No. 12, and a plaster-jacket, including the head, was put on during suspension by the feet.

CASE VII.—Male, nine years old. Spondylitis; duration five years. Family history negative. Cause unknown. Previous treatment by a brace, applied by an instrument-maker, followed by an anteroposterior spine brace applied by an orthopedic surgeon. The deformity present is shown by tracing No. 13. There was an undescended left psoas abscess. On April 20, 1898, the spine was straightened, as shown by tracing No. 14, and a plaster-jacket was put on during horizontal traction.

CASE VIII.—Male, five years old. Spondylitis; duration one year. History negative. Onset preceded by traumatism. Previous treatment by an ill-fitting steel brace. The deformity present is shown by tracing No. 15. On May 5, 1898, the spine was straightened, as shown by tracing No. 16, and a plaster-jacket was put on during horizontal traction.

The cases of scoliosis present nothing of sufficient interest to warrant detailed description. The youngest patient was nine years old and the oldest eighteen years; the shortest duration of deformity was eighteen months, and the longest seven years. In all the cases the deformity was reduced from one-third to one-half.

The patient in whom rachitic curvature was present was a male, seventeen years old, and the deformity dated from infancy. There had been no increase of the deformity for fourteen years. The operation was performed on January 13, 1898, and nothing was gained in the way of correcting the deformity.

Taking into consideration all of my cases of spondylitis, four patients had demonstrable abscesses, one had an old sinus, and one had paraplegia. No harm appears to have arisen from the abscess complication, or from the presence of the old sinus. The paraplegia appears to have been positively benefited. Two patients stopped breathing on being turned from the prone to the supine posture during chloroform narcosis, but both began to breathe again after a short interval; in one instance the plaster-jacket was cut open and allowed to gape an inch, and in the other it was not. Only one patient showed any elevation of temperature after the operation. In this instance disseminated pulmonary tuberculosis was suspected, but not proven. The patient's temperature was not taken before the operation, and consequently it is not certain that the elevation was due to the operation. In two instances it was not possible to straighten with what seemed to the operator a safe amount of force. Pressure sores under the plaster-dressings have been frequent. Their locations have been over the kyphosis, the scapular spines, the posterior iliac spines, and the sternum, and in various places about the head.

Relapsed deformity can usually be greatly reduced by a bearable amount of horizontal traction with backward bending over a foot-rest without an anesthetization. Only two patients have as yet been allowed to get up and walk around, one in a plaster-jacket, and one in an anteroposterior leverage spine brace. In no case as yet do I think I have obtained reliable bony solidification at the point of disease.

As to the cases of scoliosis, all the subjects were materially straightened and made taller, but all have lost part of the gain since the operation. It appears to me doubtful if a permanent straightening is maintained unless a reliable fixation-dressing is worn for a long time. Despite my failure above recorded, I am convinced that straightening of rachitic curvatures can be effected in younger patients.

SUPPURATING OVARIAN AND INTRALIGAMENTOUS CYSTS.[1]

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AN ovarian tumor, as a result of torsion or twisting of the pedicle, may have the circulation cut off to such an extent that the life of the tumor is destroyed, so that gangrene, suppuration, and death ensues unless adhesions are so extensive as to furnish a sufficient supply of blood to the parts. As a rule, however, there are no extensive adhesions to the tumor when torsion of the pedicle has been sufficient to completely obstruct the circulation. The suppurating tumors of which I desire to speak are

[1] Read before the Louisville Clinical Society.

not the result of torsion of the pedicle, but result from the passage of pathogenic germs from the bowel through the walls of the tumor. It is sometimes stated that ovarian cysts, or cysts arising in the uterine adnexa, suppurate because of the passage of gas from the bowel into the tumor. I do not understand, nor can I appreciate, how this can occur from the passage of gas *per se*, and I believe that these suppurating tumors result from the passage of germs of suppuration, such as the streptococcus, etc., but more frequently from the passage of the bacillus coli communis from the bowel into the tumor.

I recently removed a suppurating tumor from a feeble old woman, which weighed about forty pounds. The patient's general condition was good, considering the size of the growth and the fact that it had existed for several years, and I was greatly surprised to find upon introducing a trocar to drain off its contents that it was purulent. The amount drawn off was five gallons. The omental and intestinal adhesions were so lightly attached that they were easily separated with a sponge, showing that the suppuration had so changed the character of the tissue surrounding the cyst wall that the adhesions were ready to drop off.

In an examination of the tumor since removal it appears that adhesions had existed over its entire surface, and one would believe that I had separated them from every part of the surface of the cyst. Such a peculiar condition resulted from the action of the infection upon the walls of the tumor, and when the intestine lying in contact with the cyst wall was separated, although it was not torn, it was so rotten that I feel sure had I not sutured it thoroughly in a longitudinal direction for at least three inches it would have ruptured and the woman would have lost her life. The patient gave no evidence of constitutional infection, and had no trouble after the operation, making a prompt recovery.

The infection evidently came from the cecum and the ascending colon where they were adherent to the cyst. I have removed several large suppurating tumors which were intraligamentous or retroperitoneal; they had extended under the bowel and had unfolded the mesorectum and the mesocolon, the muscularis of the bowel lying in direct contact with the cyst wall, so that the bacilli could pass from the bowel without having to penetrate the peritoneum.

Six months ago I removed a tumor containing three gallons of pus. This tumor had existed for ten or twelve years, and had been tapped many times by a doctor in Cincinnati. The patient had been under the observation of two of our general practitioners, and a month before I operated she was suddenly taken very sick, becoming unconscious and remaining so for several days. She had high fever and her general appearance and complexion indicated that she had pus somewhere in the system. The tumor was retroperitoneal, had opened the folds of the mesorectum and the mesocolon, and had to a limited extent invaded the mesentery of the small intestine, so that the surface enucleated was twenty inches in diameter. The tumor having suppurated, the toxins from bacterial growth caused the symptoms from which the patient had recently suffered.

From another woman I removed 1½ gallons of pus from a retroperitoneal cyst arising in the hilum of the ovary, which had also unfolded the mesentery of the colon. In a fourth case, in which I operated per vaginam, on the left side there was a cyst extending under the rectum and the colon, and nearly up to the umbilicus which had suppurated. On the right side there was an intraligamentous cyst extending nearly up the umbilicus which had not suppurated. In these four cases the infection resulted from the passage of bacteria from the adherent bowel, or from the bowel where the mesentery had been opened after a fashion that allowed the muscularis of the gut to come in direct contact with the cyst wall of the tumor.

The same method of infection I am sure applies to the following case: About two years ago I performed a celiotomy upon a young married woman from Owensboro, Kentucky, for the removal of a tumor in the left inguinal region, extending nearly to the umbilicus. She was so emaciated that she did not weigh more than seventy pounds, and had been an invalid for many months, but was not generally septic. The cyst was intraligamentous, had unfolded the mesorectum, and contained two quarts of pus. The inflammatory exudations had so firmly united the cyst wall to the capsule that no dissection could be made, and the opening in both the cyst and the capsule was sutured to the abdominal incision and the cavity drained. The cavity was irrigated twice daily with sulphurous acid one part to water ten parts, which prevented bad odor and very soon caused a healthy granulating surface, and the patient returned home in four weeks with the wound entirely closed and has had no further trouble.

Two years ago I was consulted by a woman from near Salem, Indiana, whose abdomen was enlarged by a tumor to the size of that of a pregnant women at term. She had been delivered of a well-developed child about two months before she was referred to me. The tumor had been diagnosticated before she was pregnant but apparently had caused no trouble during pregnancy. Her convalescence from the labor was protracted; she had attacks of

local peritonitis, had not been able to leave her bed, had become greatly emaciated, and her general appearance indicated a fatal prognosis unless she could be cured by surgical means. I diagnosticated an ovarian cystoma with extensive adhesions. The cyst was unilocular, adherent to intestines and omentum, and contained two gallons of pus. Before the operation her temperature was 103° F., and pulse 125, but she had no fever after the first day, and her pulse was normal after a few days. Her convalescence was uninterrupted, and she returned home in three weeks.

Referring further to the first case reported, it is unusual that a woman should have so much pus in her abdomen without its causing more serious systemic infection, but the toxins of suppuration seem not to have been absorbed into the system, as no symptom of septic poisoning was present. In none of these cases did the veins or the lymphatics carry pathogenic germs into the system, nor were the toxins absorbed in any but the second case, in which the tumor contained three gallons of pus. In none of the six cases was the peritoneum soiled with pus during the operation, nor was there the slightest evidence of infection following the operation, convalescence in each case not being disturbed. While no bacteriologic examination was made of the pus from any of the cysts, I believe it was sterile, the pathogenic bacteria having been destroyed, as so often happens in chronic cases with large accumulations of pus.

NOTES ON SURGERY IN THE RECENT WAR.[1]

BY WILLIAM DUFFIELD BELL,
OF NEW YORK;
MAJOR AND SURGEON, 71ST REGIMENT, NEW YORK VOLUNTEERS.

ON the morning of June 20th, the transports having on board the 5th Army Corps under General Shafter and designed for the invasion of Cuba, arrived off Santiago. During the following four days the entire force, consisting of about 13,000 men, was landed in two detachments, one at Baiquiri, a village on the coast about seventeen miles east of Santiago, and the second detachment at the small village of Siboney, a few miles nearer Santiago, and on the line of railroad running from the Juragua Iron Mines, near Baiquiri, to the City of Santiago. Siboney was chosen as a base of operations against Santiago, and here it was that the greater part of the Army of Invasion was collected. Throughout the hamlet were several hospitals for wounded Cubans, which were directly under the control of Cuban surgeons, and were located in houses and sheds all in a more or less insanitary condition. The wounded in these hospitals were the first met with in which the results of modern projectiles could be studied, and while but little regard had been paid to the rules of antisepsis, yet they furnished object lessons that proved of great value in the campaign that followed, by the variety of wounds and the effects produced by the bullet of the Mauser rifle, the explosive bullet used by the Spanish Volunteers and fired by them from the old-fashioned Springfield rifle; also, the bullet of the ordinary Springfield rifle, and the wound produced by the shrapnel used by the Spanish artillery. The surgical dressings used by the Cuban surgeons were of necessity of the most meager character, though much skill was often shown in the treatment of these cases, and it is not a matter of surprise that they should have used these houses for hospital purposes since the same error was committed by the surgeons of the American Army when the wounded Americans from the battle-field of La Guasimas, on the morning of June 24th, as they were brought in, were placed in houses under like unsanitary conditions, when the large, open sheds of the Juragua Railroad Company, on a slight elevation and near the seashore, would have afforded ample protection from the sun by day and the heavy dews by night. These sheds were afterward occupied by the 71st Regiment, New York Volunteers, who found them a very desirable place in which to be quartered. After the army had landed and advanced on its march toward Santiago, a large and well-equipped hospital was established at Siboney under Major La Garde, Surgeon United States Army, who, prior to leaving Tampa, had arranged his ambulance and hospital outfit in perfect working order, but through some mischance this outfit was scattered among several different transports, and the army was deprived of much that would have aided materially to the efficient services rendered by this officer. There was but one field hospital in the American army in Cuba, and this was established and maintained mainly through the determined efforts of Major M. T. Wood, Chief Surgeon of the 1st Division, 5th Army Corps. This officer, when he could not secure sufficient transportation for his hospital equipments, loaded his own horses and those of the medical officers with him, with all they could carry, and the three ambulances, which constituted the entire outfit of the army, and which were attached to his division, and in this manner, by repeated trips, moved his field hospital from Siboney to Savilla, a place on the trail leading to Santiago, and about seven miles from Siboney. This was the only halt made by the army after it left Siboney until the San Juan Hills were captured after the bloody battle of July 1st, and where the army

[1] Read at a meeting of the New York Academy of Medicine, held October 6, 1898. For discussion see page 507.

encamped from that date, until it was finally moved out of Cuba and returned to the United States.

Major Wood, June 30th, established his field hospital at Playa del Este, a small, open field about three miles distant from the San Juan Hills, and near the Aquadores River, in order that a plentiful supply of water could be had conveniently. Three large tents were pitched for operating purposes, while four or five similar ones were used as follows: one for the preparation of antiseptic solutions, and in this tent was placed a large filter, through which water, that had previously been boiled, was filtered. This was done in order to make sure that any soluble poisons might be destroyed, and all doubt as to the purity of the water used set to rest. Men were detailed for this purpose, and all the water used in the operations and in the dressings of the wounded was so prepared. Five additional operating-tables besides those in the operating-tents were placed in the open space in front of the tents, and were used by the surgeons, who were assisting the hospital staff, for minor operations, and upon which wounds of a less serious character were dressed. Another tent contained surgical supplies and drugs only. The other tents were used for wounded officers and for those cases of a serious character and which required extra amount of care. The capacity of this hospital was limited to the accommodation of 100 patients, and yet over 650 patients were treated here before dusk on July 1st, and upward of 400 more had been attended to before the night of July 2d. There was no scarcity of surgical supplies and dressings at this hospital. Large boxes containing these articles and sterilizers had been brought up from Siboney with great difficulty, but the supply was ample to meet the great demand made upon it during the three-days' battle. The hospital staff under Major Wood, the Chief Surgeon, consisted of five surgeons, several hospital stewards, and a Hospital Corps company of about twenty-eight men, selected from the hospital corps of the different regiments comprising the 1st Division. Of these, thirteen men came from the hospital corps of the 71st Regiment, New York Volunteers. Three ambulances, with one or two wagons, completed the outfit. Early on the morning of July 1st everything was put in readiness for the battle that was about to take place, and shortly after nine o'clock the wounded began to arrive from the dressing-stations near the front, and from that time on, for the next two days, there was a constant stream of wounded men coming in from all directions to this one place for relief. The surgical force of the hospital went promptly to work and worked rapidly and skilfully to meet the demands made upon it, but it proved insufficient, and when toward night the fire at the front slackened, five additional surgeons were called in from the firing-line to assist, and yet in spite of all their efforts numbers of the wounded lay unattended for twelve and even twenty-four hours on the bare ground before their turn came. There was an insufficient supply of blankets and clothes due to the lack of transportation facilities.

In the matter of clothes it was very important, for the clothes of many of the soldiers were soaked with rain and stiffened with mud from the trenches, so that they had to be removed before an operation or dressing, and could not be put on again. The transportation of the wounded was another source of much concern to the medical officers. The litters belonging to the different regiments and those improvised from various articles, such as blankets, blouses, hammocks, etc., and the horses of the officers were all that could be relied upon to remove the wounded from the battle-field. Men with desperate wounds had to walk or crawl a mile, or perhaps five or six miles from the village of El Caney, or the San Juan Hills, back to the field-hospital at Playa del Este, over a wild, rough country where trails were rendered almost impassable by daily rains and by the passage of pack-mule trains and heavy army wagons. It is not surprising that under all these circumstances the work of collecting and transporting the wounded should have been one of infinite difficulty. The great variety of wounds received during the battle of July 1st, on which day the majority of the casualties occurred, would have furnished a valuable addition to the annals of surgery could a complete record have been kept of all the cases. Men shot through the abdomen by the Mauser bullet were known to have walked four and five miles to the hospital and to have arrived there in good condition, with little or no shock, and to have recovered apparently with but little disturbance in the way of pain and without the necessity of resorting to an operation.

There were several instances to my knowledge of men who received wounds from the Mauser bullet that passed directly through the liver and kidney, and yet these men thus wounded suffered but little inconvenience and have apparently showed no bad results, though what may occur in the future is still uncertain. Another point of interest was that a Mauser bullet was apt to be explosive in its action when it struck a man at short range, and especially where a viscus, as the brain, or a joint was penetrated, and inflicted a wound similar to that made by the brass explosive bullet used by the Spanish Volunteers. At a greater range than 200 yards the Mauser bullet penetrated with but a small

wound of entrance and with a slightly larger wound of exit, and both decreased in size as the firing distance was lengthened. If beyond this distance bones were injured there was always more or less comminution and the wound of exit was a trifle larger, due to the laceration of the soft parts from splinters of bone. There were some cases in which the shaft of a long bone was fractured by a Mauser bullet passing through it, with but little splintering and a clean perforation. There were several instances in which the Mauser bullet passed through the skull and out again, causing no apparent injury to the brain and the patients returned to duty in a few days with the wound entirely healed. In another instance, at short range, a young man was shot in the head by a sharpshooter and the result was similar to that caused by the explosive bullet. This explosive bullet is composed of soft lead with a brass coating, and on impact explodes, leaving a ghastly wound. It was used by the Spanish Volunteers, as has been already mentioned, who fired it in the old Springfield rifles, and who, in order to make the action more deadly, would chew the end or cut small gashes in it with a knife, so as to insure its exploding if it came in contact with any obstacle. Its passage through the air was accompanied by a peculiar humming sound, ending in a short, sharp pop, as it burst and scattered fragments of lead in the air. The existence of this bullet was denied by many officers, but the effects have been observed under circumstances that left no room for doubt.

There were but few amputations and these were performed only when a main artery had been severed or a limb mangled by shrapnel. The simplest antiseptics were found to act best in dressing such cases and iodoform was almost entirely abandoned, owing to the fact that its use in the tropics was observed to cause irritation to the skin and that it was too readily absorbed by the exposed surfaces. In dressing small wounds collodion was much used. Laparotomies were performed in several cases and I believe were fatal in almost every instance. Nearly every officer and man in the regular service was provided with a first-aid packet, which proved of great value in rendering first aid to the injured, and many of the Hospital-Corps men carried haversacks filled with these packets, which they distributed along the firing line. The Volunteers were not well supplied with these and did not appreciate the great value of these packets and would often throw them away or use them for some other purpose entirely foreign to that intended. The dressing-stations near the firing-line were devoted entirely to the application of temporary dressings, the arrest of hemorrhage, and the setting of fractures, which was necessary in quite a number of cases, and much ingenuity was displayed in the dressing of these cases of fracture. Several bad compound fractures of the thigh were received at the field-hospital and these were dressed under the most careful antiseptic precautions and put up in plaster of Paris and sent by ambulance to Siboney for transportation to the United States.

The number of killed during this campaign is estimated at about 280 and wounded at about 1400. But a small proportion of those wounded (65 in all) died of their wounds and but a small number have required much additional care since their return to the United States.

The Medical Department of the army in Cuba, in spite of all obstacles in the way of scarcity of rations, difficulty in procuring proper transportation and supplies, met the emergencies as they arose and in the whole army there was none deserving of more praise than those members of the Medical Department, who risked everything in the discharge of their duty. Passing along the line of fire, being exposed at all times to the bullets of the enemy in front, and the more deadly and continuous fire of the sharpshooters on the flanks, the Geneva cross of each medical officer and Hospital-Corps man was a tempting mark which they never failed to take advantage of, as the murder of young Dr. Dantforth shows. This officer was shot down in front of a dressing-station in the rear of the firing-line, and it is satisfactory to note that the sharpshooter who killed him met the same fate a few moments later.

PHYSICAL CONDITION OF THE FIRST UNITED STATES CAVALRY (ROUGH RIDERS) AT DATE OF MUSTERING OUT.

BY FRANK DONALDSON, M.D.,
ASSISTANT SURGEON, FIRST VOLUNTEER CAVALRY.

IT is difficult to judge at this time just what will be the outcome of the work of the Army Investigation Committee in Washington, but one fact has been emphasized by a number of witnesses before it, to wit, that the condition of the camps and of the men of the volunteer regiments, apparently without exception, left much to be desired. The blame in each case has been put upon the officers and the surgeons who failed to compel compliance with the more ordinary rules of cleanliness and health. Without criticizing the camps of other volunteer regiments which I have seen it may be interesting for medical men to know that up to date there has been no fault found with the condition of the camp or troopers of the First Volunteer Cavalry. Though the men

suffered terribly in Cuba from fever, dysentery, and serious stomach and intestinal troubles, no regiment came back in better shape, with the possible exception of the Ninth and Tenth Negro Cavalry Regiments.

In Cuba, of course, we were able to give the sick men anything but satisfactory care owing to an almost total lack of a hospital outfit; and in view of our experience both in Cuba and at Montauk I cannot but sincerely trust that the Surgeon-General will see fit to return to the old system of regimental hospitals. Many of our men in Cuba should have been treated in a well-equipped regimental hospital, but the division hospital was five miles away and it was practically impossible to send the men there against their will. They preferred to suffer and be among their own comrades at the front.

I wrote a long letter last spring to the *Philadelphia Medical Journal*, after some days spent with Dr. Girard at Camp Alger, in which I conclusively proved (?) that regimental hospitals should be done away with; experience has taught me that I did not know what I was talking about. I am sure to-day that had we had a proper hospital outfit in Cuba we would have saved much suffering and probably several lives. What we called a hospital was a large fly under which we put the men. We had no cots, insufficient supply of blankets and no rubber covering beyond the miserable government poncho which never protected any one from anything, certainly not from rain. The troopers, however, did have rather more and better food than most of the regiments. Thanks to Colonel Roosevelt's unceasing thoughtfulness for the men and his delightful contempt for red-tape where their needs were concerned, we were enabled to "rustle" quantities of food and stimulants. His private purse was always open and he often told me to stop at no expense in getting supplies of all kinds.

As I said, the regiment returned in excellent condition and with his permission we immediately established the despised regimental hospital. Here in the course of four weeks we treated upward of two hundred men and had the satisfaction of sending many of them back to their troops in fairly good shape. An interesting fact in connection with the low form of malaria with which most of those treated were afflicted and the stomach and intestinal trouble accompanying it, was that quinin, without any exception, brought on severe vomiting; and it may seem strange that in four weeks I did not personally give twenty grains of quinin. I did not have the proper preparation for hypodermic use, and should have hesitated to use it in any event. In many the vitality was so low and the circulation so sluggish that even a few minims of morphin given with an antiseptic syringe frequently lit up a subacute inflammation, and I am sure that the combination of quinin and urea would have caused troublesome abscesses. My efforts were directed toward getting their stomachs and digestive apparatus in working condition, and with this purpose in view they were fed frequently with small amounts of delicate nutriments. I used sherry and egg, port wine, milk punches, champagne, and other stimulants with absolute freedom. It should be remembered that most of these men had been for several months, while at Tampa and in Cuba, taking from 30 to 60 grains of quinin a day, and six out of ten men who came to the hospital were suffering from partial deafness, and all from more or less constant nausea and vomiting. I can give no better proof of the care which Colonel Roosevelt demanded for his men and which they received than the fact that there were only thirty men who were really too sick to come to Montauk to be mustered out. I make this statement advisedly, for I have a complete list of those who were not on hand when we finally broke camp. The actual number which did not come to be mustered out was 103, many of these, however, though physically able to get back, were delayed in returning from various causes. From the men not seen personally I have received letters regarding their condition, and after carefully examining my notes I am safe in making this statement. Of these thirty only twenty were ill, and at the present writing we have but four men seriously sick; these four with typhoid fever. This record is a source of considerable pride to us, for surely thirty ill men out of a regiment of 1200 speaks eloquently for the care which they have received.

As I said before, we could not have obtained this result had it not been for Colonel Roosevelt's constant help, moral and financial, and I can truthfully say that it is to his unselfish devotion, unceasing oversight and personal interest in every man, that this volunteer regiment has come out in such good shape. Moreover, his interest did not cease with the breaking up at Montauk. Acting under his orders the condition and position of every man, sick or in need, has been looked into by me and their necessities provided for. Of course, I do not mean to say that there were not men mustered out who were more or less sick; a number of them still have certain stomach and intestinal trouble, and occasional fever.

Its a curious fact that out of a certain series of eighty men whom I examined for mustering out, seventy-four had either enlarged livers or spleens. Another curious fact is that in three cases I found,

the men complained of a gradually failing eyesight, and on questioning them it appeared that the trouble began after they had been for four or five weeks at Tampa. None of the three men of whom I speak had been to Cuba. They were not suffering from any kidney trouble, nor had they had a sunstroke. In two of the patients, while they could distinguish objects, their eyesight for reading had failed completely. These two had been treated by experts in New York, and told me that they could then with effort read ordinary type and that their eyesight was gradually improving. The third soldier told me that he had gotten no better, and the specialist feared his eyesight was permanently gone. An instance of apparent transmission of the Cuban fever by infection from a fly-bite occurred after we were mustered out. A lady who was helping me nurse in the regimental hospital was taken a few days later with what proved to be a typical case of Cuban fever. I was absolutely at a loss to account for it. She had been perfectly well, had not been in a malarious district, and spent the summer in the North. During several days while at Camp Wikoff we had a terrible visitation of flies and the men in the hospital complained that their bite frequently drew blood and on several occasions the lady called my attention to the fact that blood had followed the bite of one of the flies. She is now in a hospital and the disease is running a typical course.

ADDRESS.

CORNELL UNIVERSITY MEDICAL COLLEGE.[1]

BY WM. M. POLK, M.D.,
OF NEW YORK;
DEAN AND DIRECTOR.

There is a divinity which shapes our ends, rough hew them as we may.

HEREIN lies the explanation of the success which has attended the conception and creation of this medical school, and we who have been the instruments employed have but one feeling, an all-pervading feeling, especially on this the opening occasion of our educational work; and this is a deep sense of our responsibilities to our benefactor, our University, and to you. It might be supposed that the distinction, which these factors in our existence have bestowed upon us, would create an elation which would warrant a desire for the triumphal car and its attendant glories, but I know, that so far from this being the state of our minds, a spirit of seriousness possesses us, in keeping with renewed effort rather than effort accomplished. It is evident that this argues well for the execution of the trust placed in our hands.

In this wonderful country of ours a considerable number of men has been produced who through the exercise of natural powers upon the opportunities before them have acquired the means wherewith to bestow munificent gifts. With the thousands of impecunious enterprises continuously projected, it is evident that these men are never free from solicitation to contribute to this, patronize that, or endow the other. Hence it is scarcely to be wondered at, that more than the ordinary discrimination is needed to avoid bestowal in wrong direction and apply it in the right. When, therefore, after proper inquiry and deliberation, such a bestowal is made, it carries with it the obligation that the recipient shall in all things live up to the expectation of the benefactor. In the construction of any undertaking ideals may be priceless, and they are priceless if they personify the highest, installed upon a basis of common sense. Such ideals contribute working formulæ, and can, therefore, be readily used in promoting an undertaking; and the greatest good fortune attends upon the enterprise which possesses such an ideal and has at hand the means with which to reach toward it. It is doubly fortunate if, with the means, come hand in hand the ideal. You know we have the means, and infer we have the ideal, but you do not know that the same hand which bestowed the means unconsciously brought with it the ideal. For this gift was in reality a protest against intrigue and deception, and a proof that faithfulness is as essential to lasting success in the great things of life as in the smallest. And yet this was not all. It was not enough to give us this ideal, but a place in which to exercise and develop it in all its bearings was also given in putting us within the folds of a great university.

If you will go with me to the town of Ithaca you will there see grouped upon the hills overlooking the head of one of the most extensive and beautiful of the many lakes peculiar to the interior of this State, a wonderful sight: A great university, the result of thirty years of growth. And, questioning as to the source of such a development, we find the answer in the words of its distinguished President: "It lies in its 'constitutive idea.' Every college and university is an organ of the highest knowledge. Its function is the consecration of liberal culture. This was the accepted view held a generation ago, and it was deemed sufficient. Cornell University went further. It associated practical education with liberal. It ranked professional training among its functions, and it enlarged the notion of learned or scientific professions so as to include, along with the traditional trio of law, medicine, theology, whatever calling rests on science or scholarship." In the words of its founder, it is an institution "where any person can find instruction in any study." "Hospitable to all the learned and scientific vocations of modern times, it yet, at the same time, enlarges the conception of liberal culture so as to give the sciences of nature and the modern humanities a place beside the ancient discipline of Greek, Latin, and mathematics."

The eminently American character of the University is clearly defined in its democracy of liberal and scientific schools, and the vigor which characterizes its administration is perpetuated in the love and loyalty of its large classes, and the marvelous *esprit de corps* of its numerous and influential alumni. This is the inheritance we

[1] Delivered at the opening exercises of the College, October 4, 1898.

have been bidden to share, and in taking our place, do so with a deep determination to lend our minds and bodies to the fulfilment of its ideals.

As has been said, an essential part of this ideal is the practical, and herein lies the core of what we deem our duty to you, the students.

At the risk of wearying you with repetition of what you have already learned from our circular of information, I must say something of the manner in which we propose to meet the demand for the practical in your instruction. After a good many years devoted to medical education, we have arrived at the conviction that clinical demonstration upon a broad basis of laboratory instruction is the only way in which to prepare students for the degree of Doctor of Medicine. This has been forcibly borne in upon all undergraduate teachers by the universal demand for post-graduate instruction in details, without which a graduate is in reality unfitted for the practice of this profession. The first question that had to be answered related to the disposition of the didactic teaching, that part of the course which offered the preliminary knowledge of the theory of medicine as an introduction to the practical. After no small amount of labor and experimentation we reached the conclusion that recitation from text-books, conducted under the direction of a trained corps of competent instructors, afforded a better basis of theory than the didactic lecture. This arrangement had also another advantage of even greater merit, in that it freed the older and more experienced teacher, so that he could give his time to the practical or clinical demonstration of the theory. To do this properly, it was evident that he must have more time and opportunity than the so-called clinic of the amphitheater afforded. This could only be found in closer and more frequent contact between the student and patient than was possible at such clinics; hence, the plan finally adopted, namely, to break up the classes into small sections, and scatter such sections through the wards of hospitals and dispensaries, each under the guidance of a trained clinician, whose object would be less the display of his own learning than the eliciting of the student's knowledge, with a view to its correction and enlargement, Given then this broad basis of laboratory instruction, text-book drilling with clinical demonstration, superimposed and presented to such small sections as will insure the direct impress of teacher upon each student, we feel we have advanced a long way toward securing the best instruction that can possibly be presented to the medical undergraduate of to-day. To fully meet the demands of such a system, it is evident that patients are a necessity. The hospitals to which we have access, though many and large, by no means meet the requirements. This can only come from the control of a large outdoor or walking clinic.

For many years those of us who believed in this method of conducting medical education, dreamed of a college building which would be a large dispensary, surrounding and enveloping a medical school; a dispensary in which beside space for consultation with patients with every conceivable disorder, there should be close at hand space for the accommodation of students who could thus have ready access to every opportunity for demonstration. With room for each department to conduct its own clinical microscopy, one or more large lecture-halls for such lines of teaching as might still require didactics; museums filled with every required model or specimen needed for demonstration; work-rooms for every kind of teaching for which the cadaver may be required; space where all that pertains to physiology may be unfolded, and rooms for chemistry, to show not only what pertains to the inorganic of medicine, but all that is known or can be known upon the subject of animal or physiological chemistry.

This was our dream, and now when we awake and find this dream practically a reality—when we see rising before us all that our imagination so long pictured, and look back upon the years so vexatiously spent in making brick without the straw—we enter, as few have entered, into the feeling of the people of Israel as they turned their eyes to the land which Joshua and Caleb had told them of. And in a spirit of deep appreciation we begin here our part in the completion of the edifice which typifies the spirit and the body of our University.

With imposing presence it lifts itself upon its bed of rock, suggestive of some vast cathedral. We see its minarets, its spires and towers reaching heavenward, each marking the position of some component part or school, and telling in degree the sum of effort and perfection put forth and attained by each. Moving amidst its massive pillars and beneath its solemn arches, student and teacher alike approach its altar, and there find the visible presence of that sacred spirit of amity, unity, loyalty, and friendship which touches every soul that enters within its portals. Upon and within this stately edifice our place as yet is scarcely more than indicated. But filled with the spirit of that loyal faith given us in the example of our benefactor, imbued with the power of that high-souled aggression characterizing our University, and strong in the force of our own purpose, we engage to build for you as fair, as firm, as grand a spire as ever reared its head toward heaven. Faithful, aggressive, strong, we one and all pledge you our best and ever-increasing effort.

MEDICAL PROGRESS.

Epidemic Jaundice.—POMEROY (*Boston Med. and Surg. Jour.*, August 4, 1898) gives an account of an epidemic of jaundice which existed in Calumet, Mich., and its vicinity from June, 1897, to January, 1898. In all there were about 695 cases of catarrhal cholangio-itis, in a population of about thirty thousand. No satisfactory etiology could be made out. To a certain degree the disease was regarded as a contagious, specific infection by the physicians in the vicinity, independent of temperature and drinking-water, and slightly, if at all, influenced by locality. The presence of several patients in a house seemed to concentrate the poison, so that invariably the last of the members of a family to fall sick had the severest symptoms. In no instance did every member of the family fall ill. Almost all of the patients were children from

three months of age and upward, only thirty adults being affected. In children the first thing for which a doctor was summoned was the discoloration of the skin; while in the adults the jaundice was preceded for several days by pain similar to that caused by the passage of gall-stones, though very much milder in degree. All of the patients attacked recovered and so there were no autopsies to establish the exact condition of the organs, and the most painstaking examinations of the blood, urine, feces, sputum, and gastric contents yielded only negative results. There was anorexia and a little vomiting occasionally, but gastro-intestinal symptoms were not generally present. There was a degree or two of fever for a brief period. The treatment employed was the giving of an anodyn, and a mercurial or saline purge. Afterward the phosphate of soda was given until the stools were of normal color and the bile salts had disappeared from the urine. For the itching the subcutaneous injection of $\frac{1}{10}$ to $\frac{1}{4}$ of a grain of the muriate of pilocarpin daily, gave the best results.

One curious feature of this epidemic of catarrhal cholangio-itis was the simultaneous occurrence of an unprecedentedly large number of cases of cholelithiasis. In one day the writer was called upon to treat four women in attacks of gall-stone colic, and the diagnosis was confirmed in three of these four cases by the passage of gall-stones in the stools.

Excision of Tubercular Cecum.—LEDIARD (*Lancet*, August 13, 1898) reports the case of a man, aged sixty-three years, upon whom he twice operated, once for an abscess to the right of the umbilicus, and once for the sinus which followed lancing of this abscess, and which discharged pus and occasionally fecal matter. When the sinus was exposed it was found to lead to the cavity of the cecum, and that organ was so badly riddled with tuberculosis that it was removed. The ascending colon was closed by suture, and the ileum was allowed to open externally as the condition of the patient did not warrant prolonging the operation sufficiently to unite these two portions of the bowel. The patient survived the operation two months, when he succumbed to pulmonary and cardiac trouble. This case is interesting from the fact that malignant disease of the cecum is usually cancerous rather than tuberculous.

Diabetic Coma Successfully Treated by Saline Infusion.—OLIVER (*Lancet*, August 13, 1898) was called upon to treat a man, aged thirty years, who had been suffering from diabetes for nine months. He was apparently improving when diabetic coma developed during a short railway journey. While still in a comatose condition two and one-half pints of saline solution was injected into the median basilic vein, and an active purge was given. Consciousness gradually returned and persisted until the time of report twenty-eight days later. For three days after the transfusion the patient passed a very small quantity of urine, about 21 ounces, instead of 140 to 200 ounces as he had been doing. After three days, however, the quantity rapidly increased until it reached 190 ounces daily. The advantages of even a temporary restoration of consciousness in persons, for example, who have business affairs to settle before death, is too plain to need amplification.

THERAPEUTIC NOTES.

The Production of Abortion by Nitrate of Silver.—PERLSEE (*Prague Med. Wochenschr.*, July 21, 1898) was called upon to bring about miscarriage in four cases of pregnancy complicated by nephritis and uncontrollable vomiting. He did this most successfully by the introduction of a stick of nitrate of silver above the inner os uteri. The stick should project about one-half inch from the holder so as to disinfect the cervical canal as it is introduced. Pains came on in from two to six hours after the cauterization. In every respect the delivery in the four cases was as perfect as could be wished for. The operation has the merit of simplicity, promptness, efficiency, and is aseptic.

Prolapse of the Omentum after Hysterectomy Cured by Posture.—FRANKEL (*Rev. de Thera.*, August 1, 1898) removed by the vaginal operation a myomatous uterus. The omentum appeared in the wound and was pushed up and held in place by an iodoform tampon. The following day there were some symptoms of intestinal obstruction and the tampon was therefore removed. It dragged out with it as far as the surface of the vulva the greater omentum. Not wishing to touch the omentum with any instrument at hand the operator put the patient in the knee-chest position and in a few minutes the omentum was restored to the abdominal cavity by the force of gravity. The patient made a good recovery. The success of this simple maneuver is worth remembering.

Suppurative Peritonitis Treated by Rectal Incision.—MOLIN (*Gaz. Heb. de Med. et de Chir.*, July 21, 1898) cites four cases of acute peritonitis with a collection of pus in the pelvis in which the abscess cavity was opened by a rectal incision. In every case relief was prompt and satisfactory. Three of the patients recovered without fistula. The fourth succumbed to an extension upward of his peritonitis. Rectal incision has been almost unanimously condemned by writers upon this subject. Delbet says that the drainage is very imperfect and often conducts fecal matter into the pelvis. Vauverts says that rectal incision is only a bad makeshift to which one ought not to resort unless the abscess is about to break into the rectum. These opinions scarcely accord with the results of spontaneous rupture into the rectum, for this termination is justly considered most happy, since it is almost invariably followed by recovery. Some authors state that fistulous tracts are apt to remain, inflaming the rectum and giving rise to new abscesses. The writer considers that these dangers are exaggerated and strongly advocates this method in suitable cases because of its simplicity and because it reduces to a minimum the shock of operation. This is a most important point, since many of these patients are extremely feeble.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, OCTOBER 15, 1898.

HOSPITAL REPORTS.

We had occasion a few weeks ago to refer to the scientific and didactic value of systematic reports of actual hospital work. The opinion then expressed as to the worth of such publications, is strengthened by the perusal of the medical and surgical reports of the Boston City Hospital. The present volume, the ninth in the series, is edited by Drs. Charles F. Folsom, W. T. Councilman, and Herbert L. Burrell, and is not only an excellent *résumé* of the work of the hospital during the past year, but is also of high literary and scientific worth.

Merely to illustrate the contents of the volume, a few articles will be singled out: "A Clinical Study of Eight Hundred Cases of Diphtheria," "Acute Degeneration of the Nervous System in Diphtheria," "Seventy-one Cases of Cerebro-spinal Meningitis," "The Local Anesthetics Used in the Eye," "Endocarditis from Gonorrhea," "A Report of a Case of Appendicitis, Showing the Relation of the Colon Bacillus and the Streptococcus Pyogenes as Etiological Factors." There are, also, reports from the Pathological Laboratory and clinical data of interesting cases. On the whole, the report shows the value of systematic endeavor in the study of patients in hospital services and what is thus gained by those under whose observation the patients have been, is shared by all who will read this record.

A signicant article is that of Dr. Burrell on "The New Surgical Services." Briefly outlined, it is a sketch of a scheme inaugurated by the trustees of the hospital for the employment of young men in the wards and for the retirement of the older surgeons to the rank of consultants. There are first, second, and third assistants, drawn from the hospital's dispensary, each of whom sees a certain amount of service in the operating-room and wards of the hospital under certain rules and restrictions. How well this redounds to the welfare of the surgical service is at once evident. Moreover, the younger men will acquire in the course of a few years, an immense experience, while they will not be obliged to wait until they are gray-headed before the privilege of operating in a hospital comes to them with its attendant responsibility. This project is new, but in every way commendable. We suggest the consideration of its features to the directors of some metropolitan hospitals, whose wards might be the gainers by the infusion of the blood of young men into their surgical services.

THE WORLD'S FOOD-SUPPLY.

IN latter years it has become the fashion for the President of the British Association for the Advancement of Science to make public in his Presidential Address some discovery of great scientific importance or to startle the thinking world with glimpses into the stores of the future. Sir William Crookes in his address before the Congress in Bristol a few weeks ago maintained the custom which his illustrious predecessors had established, by setting forth in great detail a stupendous mass of apparently incontrovertible statistics to show that all civilized nations stand in deadly peril of not having enough to eat, and this within thirty years. To all others than the rabid Socialist who hails the fulfilment of this prophesy as a solution of the destiny of the plutocrat, this information would be very depressing were it not that the illustrious forecaster points a way out of the collossal dilemma which has been unwittingly thrust upon us, and this by the utilization of the laboratory. Before we are in the grip of actual dearth, the

chemist will step in and postpone the day of famine to so distant a period that we, and our sons, and our grandsons may legitimately live without undue solicitude for the mortal future.

After full consideration of the wheat-growing lands of the world, Sir William points out that face to face with deficient acreage we must increase wheat-growing acre-capacity by the application of a "dominant" manure, which for wheat is nitrogen, fixed in the form of ammonia or nitric acid. The sources of available nitrogen are several: (1) From sulphate of ammonia which results from the distillation of coal in the process of gas-making, a comparatively inconsequential source. (2) From leguminous plants which bear on their roots nodosities abounding in bacteria endowed with the properties of fixing atmospheric nitrogen, also an insufficient source. (3) From the treasure of nitrogen locked up in the sewage and drainage of towns, an important source, but which at the present time is almost absolutely unutilized. (4) From nitrate of soda, or Chili saltpeter, which occurs in its native form over a narrow band of the plain of Tamarugal. This has been considered an inexhaustible source, but recent careful investigations would seem to point that this nitrogenous manure will be exhausted, at least in its present proportion of nitrate, in from twenty to thirty years.

The gleam of light amid the darkness of despondency lies in the conversion of nitrogen in its free state, which is one of the most abundant and prevailing bodies on the face of the earth, into nitrogen in a fixed state, which wheat demands. The fixation of atmospheric nitrogen, therefore, is, in brief, the solution of the problem which is so vital to the progress of civilized humanity. The agency, or force, which is to be the handmaid of this momentous transformation, is that which has already more than revolutionized the face of the scientific world, namely, electricity. A few years ago Sir William Crookes showed that nitrogen is a combustible gas, and the reason why, when once ignited, the flames do not spread through the atmosphere and deluge the world in a sea of nitric acid, is that its igniting point is higher than the temperature of its flame; not, therefore, hot enough to set fire to the adjacent mixture. But by passing a strong induction current the air takes fire and continues to burn with a powerful flame, producing nitrous and nitric acid. This source of nitrogen is inexhaustible, but the difficulty arises in generating electricity in the ordinary way, with steam engines and dynamos, that will convert it. To encompass this difficulty, the scientific utilitarian must harness Nature's inexhaustible sources of energy, the waterfalls of the world, such as has already been done with Niagara. It is estimated that by the utilization of the electricity now generated at Niagara, nitrate of soda would cost about $25 per ton, which compares very favorably with Chili nitrate at $37 per ton.

ECHOES AND NEWS.

Another Bellevue Hospital Appointment.—Among the new appointments made by Commissioner Keller to the Visiting Staff of Bellevue Hospital is that of Dr. Charles H. Chetwood as Visiting Surgeon.

Sickness in Porto Rico.—It is reported that 2500 soldiers are sick in Porto Rica, but in most cases their condition is not serious. Field hospitals are being erected as rapidly as possible, and the sick transferred to them with very favorable results.

Smallpox at Manila.—Reports from Manila, dated October 6th state that there had been fourteen cases of smallpox and six deaths from that disease among the American troops in the last two days. Eight deaths from typhoid fever have also been recorded.

Smallpox in Ohio.—It is now officially declared by the State Board of Health of Ohio that more than 200 cases of smallpox have occurred at Wapakoneta, and have been treated as chicken-pox. The disease is of a very mild type, and no deaths have occurred, to which is due the mistake in diagnosis. Rigid measures are being taken to eradicate it.

Harlem Medical Association.—At the meeting of the Association Monday evening, October 10th, the paper of the evening, "The Differential Diagnosis between Early Abortion and Ectopic Pregnancy," was presented by Dr. H. N. Vineberg. A Memorial of Dr. Philip Arthur Malleson, the former President of the Society, who died recently, was read by Dr. Wm. Westerfield.

Insanity on the Transport "Obdam."—The mishap to the transport "Obdam" from fire in her coal-bunkers necessitating her return to Santiago seems to have had a serious effect on the 240 convalescents on board. Three cases of insanity have already developed and it is feared that the disappointment caused by turning back may, owing to the weakened condition of the men, similarly affect others.

Improvement in Transportation.—The arrival of the transports "Panama" and "Missouri" from Ponce and other Porto-Rican ports, with 190 and 269 men, respectively,

shows a marked improvement in the transportation of the sick and wounded over those which conveyed the troops to Montauk. It demonstrates what can be done when sufficient care and effort are put forth. The condition of the ships was beyond reproach. Everything was neat and clean aboard them, and the men received proper care from the nurses and surgeons aboard.

American Academy of Railway Surgeons.—The following officers were elected for the ensuing year: President, Dr. W. W. Grant, Denver; first vice-president, Dr. J. F. Pritchard, Manitowoc, Wisconsin; second vice-president, Dr. J. P. Lord, Omaha, Nebraska; secretary, Dr. T. B. Lacy, Council Bluffs, Iowa; treasurer, Dr. C. B. Kibler, Corry, Pennsylvania; editor, Dr. Fred. J. Hodges, Ashland, Wisconsin. Place for holding the next meeting, Omaha, Nebraska, Obtober, 1899. Committee of Arrangements—Dr. J. P. Lord, Chairman; Drs. T. B. Lacey and Fred. J. Hodges.

Our Troops at Santiago.—The general health of the American troops is now better than ever before. The recent heavy rains have done much for the health of the camps. There has been a slight increase of ordinary fever, but all cases of yellow fever in the detention hospital are convalescent and practically ready to be discharged. The cooler weather is having an excellent effect on the sick. The troops stationed at San Luis have benefited greatly by a change of camps. General Ewers reports a reduction of sickness among his men from 700 to 30. The Second Immunes, at Altosongo, have only fifteen sick, with light attacks of malaria and dysentery.

Volunteer Surgical Talent for the Prince of Wales.—The Prince of Wales has been inundated with offers of assistance while he has been confined to his bed with a fracture of the patella. An equine bone-setter writing from a Park-Lane mews criticises the diagnosis of the surgeons in attendance. Three well-known peers urge his employment of some different persons "whose cures are marvelous," one recommending a Scotch gardener whose fingers are reputed to possess magnetic strength. An Irish Baronet is prepared to come immediately "to exert a something which has been in the family for years and cured my grandfather's game leg." A countess sent a bone which cured some family connection "by rubbing in a circular fashion over the weak spot," but the family treasure has been returned without a trial.

Yellow Fever in the South.—From the weekly report of the United States Marine Hospital Service, ending October 7th, it is apparent that yellow fever is steadily spreading in the States of Louisiana and Mississippi. Not only has there been an increase in the number of cases in the towns already infected, but new cases are steadily being discovered in neighboring towns and villages. The death-rate, however, continues very low, indicating the mild character of the disease. Unofficial accounts of a later date announce that nineteen counties in the State of Mississippi are infected and twenty-three cities and villages. Four interstate railroads have been obliged to suspend operations. The Mississippi State Board of Health has adopted the unwise course of advising all the citizens who can to leave the infected towns as the only method of escaping the fever.

Health of the Volunteer Camps.—Typhoid fever still continues its ravages at Camp Meade, Pa., several deaths from it having been reported during the past week. A number of cases have been sent to the Reading Hospital. The health of the New York troops is particularly bad, only 400 members of the 203d Regiment being reported fit for duty. More than half the men in the hospitals are homesick, but the surgeons say that after they have been home on thirty-days' furlough they will be all right. The food-supply according to Chief Quartermaster Howard has greatly improved. The rations are fresh and nutritious, and there is abundant supply. The men make no complaints about their food, but a large majority of them are anxious to go home. At Lexington, Ky., out of 584 cases in the general hospital there are 220 cases of typhoid fever. At Fort Thomas the non-typhoid cases are being transferred to the regular army hospital in order to lighten the hospital work sufficiently to allow the regimental surgeons and nurses to return to their regiments. At Camp Wikoff only 28 patients, all typhoid cases, remain in the general hospital. They will be transferred to New York and Brooklyn hospitals within a week. The railroad hospital for emergency cases, at Long Island City, was closed last week. The Red Cross Society has packed up its supplies and sent them to its headquarters in New York. The hospital corps and nurses, some 60 in number, will be retained until the government decides where to send them. The largest and most complete field-hospital in the world is to be erected at Montauk, L. I., about a mile from the site of the present general hospital. The buildings will be of brick and wood, and the plumbing and sewage will be complete. Work will be begun immediately.

The War Department's Reply to the Investigating Commission.—The Investigating Commission is not satisfied with the reply that Secretary Alger has made to its inquiries concerning neglect and incompetency in the management of the war. The answer has, therefore, been returned to the Secretary with a request for more detailed information. As an instance of the incompleteness of the replies, the question was asked, "Who had been influential in selecting the camp-sites?" The only answer given to this is that General Lee selected the camp at Jacksonville. No attempt seems to have been made to explain the causes of the hardships suffered by the soldiers at Tampa, before Santiago, or upon the transports. The Commission has busied itself the past week in considering reports of Adjutant-General Corbin, Surgeon-General Sternberg, and of the heads of other departments. Next week the Commission expects to make a tour of inspection of the various volunteer camps.

If Preventable, Why Not Prevented?—There can be little doubt that there is an intensified and gradually growing public interest in the campaign against "the white

plague," and it is gratifying to see that a portion of the secular press is lending its powerful support to the movement recently started by Sir Wm. Broadbent and a considerable number of the leading members of the medical profession in London, to take steps to check the continued prevalence of tuberculous disease in this country. The question is eminently one upon which an enlightened public opinion ought to be formed. The public mind must be aroused to the fact that consumption and other forms of tubercle are preventable diseases. "If preventable, why not prevented?" as the Prince of Wales said on a memorable occasion. A public meeting will be held early in October. At this meeting the formation of an association for the prevention of tuberculosis on lines similar to those of the associations which are doing such good work in France and Belgium will be proposed, and other means will be concerted for placing sufferers from pulmonary consumption in its early stages under the most favorable conditions for recovery.—*British Medical Journal.*

The Navy's Loss in the War.—The total loss in the navy in killed and wounded in all the engagements of the Spanish War is eighty-four men, of whom seventeen were killed and sixty-seven wounded. In the naval engagement at Manila one man was killed and nine wounded, all of the latter returning promptly to duty. In the battle with Cervera's fleet at Santiago July 3d, one man was killed and ten wounded, all the wounded returning to duty. In the attack on the Santiago forts June 22d, one man was killed and eleven wounded, seven of whom returned to duty. The heaviest loss of the navy was at Guantanamo. There were twenty-two casualties in that 100-hour fight, six were killed, and of the sixteen wounded men nine returned to duty, three were invalided from the service, and four continue under treatment. At Cienfuegos one was killed, one died from wounds, and ten were wounded, nine of whom returned to duty. At Cadenas the torpedo-boat "Winslow" and the gunboat "Hudson" lost five men killed and three wounded, all the latter returning to duty. In the bombardment of San Juan one man was killed and seven wounded, six of whom returned to duty. There were four other casualties in as many separate engagements. Considering results obtained, this list is said to be the most remarkable in the naval history of the world.

The Navy's Medical Corps.—The annual report of the Surgeon-General of the Navy, W. K. Van Reypen, has been submitted for publication. The medical department, like all the other departments of the Navy, displayed rare good judgment and foresight in preparing in advance for every emergency. When the "Maine" was destroyed preparations were begun immediately for every contingency. The hospitals were fully occupied, plans were prepared for pavillion wards, and the naval laboratory was put in a condition of efficiency to furnish medical and surgical supplies in any quantity. When war seemed imminent every vessel likely to be engaged was given a full outfit of medical supplies for war. In anticipation of a large increase of the navy proper outfits were prepared and boxed ready for call. The result was that there was not an instance during the war of any vessel being obliged to wait for her medical stores. It was known that the medical corps was inadequate in number for war, yet there was no law authorizing the employment of volunteer medical officers. Medical boards were sent out, however, in anticipation, to the principal cities to examine applicants for appointment. Consequently when war broke out the medical department had at hand from which to make selections of volunteer surgeons, a long list of well-educated men, and thirty-seven of these were appointed out of 2000 applicants. Surgeon-General Van Reypen says: "They have rendered efficient service, and have been a credit to the Navy. Some have had unusual and trying experiences, but they have accommodated themselves to their environments, and have justified their appointment." Only one medical officer was killed during the war, Assistant-Surgeon John Blair Gibbs, who fell at Guantanamo, serving with the Marine Battalion. The valuable services rendered by the hospital ship "Solace" is briefly set forth. Praise and credit are bestowed in this report upon the patriotic women who ably supplemented the efforts of the Government in contributing supplies for the sick and wounded. Most favorable mention is also made of the female nurses who volunteered their services and were assigned to duty in hospitals. The report concludes as follows: "I cannot close this portion of the Bureau's report without bearing testimony to the efficiency, skill, and devotion to duty of the personnel of the Medical Department. Not a word but of praise has the bureau heard of any of them—regulars or volunteers. When war was imminent they vied with one another in their efforts to get on fighting ships. Some had greater opportunities than others, but all have done well the work assigned to them. The medical officers of the vessels in the fight at Manilla and in the battle of the 3d of July shared the dangers of their comrades, and should participate in the praise accorded them. The medical officers of the 'Solace' have the honor of inaugurating the first complete system of antiseptic surgery at sea. They have adapted means to ends, have improvised apparatus, have been fertile in expedients, and have the satisfaction of having demonstrated that with skill and intelligence the percentage of mortality among the patients on a well-equipped ambulance-ship will be no greater than in the hospitals on shore. Medical Inspector Persons found himself suddenly confronted with 226 Spanish sick or wounded prisoners in a hastily established hospital. He was equal to the emergency, and he and his assistants were complimented by Admiral Cevera when he visited the camp. The medical officers of the other hospitals have had sudden large accessions of patients. They were always ready and always cared for them well."

For Chronic Sciatica the following stimulating liniment is recommended:

℞ Ol. terebinthinæ	aa	3	vi
Ac. acetici			
Camphoræ		3	ii.

M. Sig. External use.

CORRESPONDENCE.

COLORADO A NATIONAL HEALTH-RESORT.

[Extracts from a private letter to the Editor.]

DEAR DR. GOFFE:—It is a long time since you have heard from your consumptive friend out West, but that does not mean, I assure you, that you have been out of my mind. I am, indeed, very happy and thankful. I have now reached a weight that was never anticipated, 150 pounds! How's that for Colorado? I never felt so well as I do now; never knew before what it was to be a good animal, and that, in spite of the fact that I have had two slight hemorrhages this summer. At the time these occurred I was rather pleased than otherwise, for here, you know, experience has shown that if one must be a consumptive its much better to be classed as a hemorrhagic case. Though this town is the Mecca of so many hopes there is indeed an awful amount of sadness here. Many come to find in this grand climate restored health, and in consequence happiness, but there is an army of sufferers whose disease, being advanced, are beyond hope, and, though many such live longer here than elsewhere, still the fatal ending is none the less sure.

That this latter class should come here is of course all right when they are possessed of the necessary funds; but in the cases of so many "funds" means just enough money to get here, and, as privation is absolutely incompatible with the cure of consumption, getting here means to die far away from home and from one's friends and relatives. It's a great shame, indeed, that physicians persist in sending such cases here.

As there seems to be no end of money in the East for the building of unnecessary institutions, would it not be a glorious thing if some one would build here a great sanatorium, such as are found in Germany, where poor people with phthisis might be sent, some to find renewed health and usefulness, and others to go down gradually, easily, living longer than they could anywhere else? In view of the statistics which such an institution would furnish, there would be no place for the mountains of New York or for other Eastern sanatoria, and little for Southern California.

You may think that I am over enthusiastic with regard to the climate of the lower Rockies—the slope of the Sangre de Cristo, as the Spanish settlers called them—and this in view of my own recovery, but, I assure you, that could you personally interview the many "third stagers" that I have, people who have come here only after wasting that golden period, the first stage, in the health-resorts of the East, you would feel as I do. Doubtless many consumptives recover elsewhere (given the proper environment and not too degenerate a tissue, tuberculosis shows a natural tendency to cure), but it is my firm conviction that where one gets well in the East a hundred would recover here.

Just think a bit; on the slopes of the Rockies may be found all grades of humidity (except wetness), all grades of temperature and all grades of altitudes. What a natural sanatorium! The most suitable climate may be found for any given case and all within a radius of 1000 miles. The expense attendant upon comfortable living is the one great obstacle—which time, meaning practically increased population, and irrigation will remedy.

I honestly believe that most Eastern physicians are profoundly ignorant as to the health-resources of this great Western country. A department of climatology is a needed addition to most medical colleges. I know from my own experience that I had great difficulty in finding any one to tell me where to go. Why! As you know my physician in New York wanted to treat me by hydrotherapy. Think of it! Keep a man with consumption in that death-dealing climate when there is a Colorado—and treat him with cold water! With a humidity of from 60° to saturation I cannot understand why additional hydrotherapy is required in New York. Here I read, drive, smoke, sleep, and drink whisky and milk, and therein lies the cure of tuberculosis—with the possible exception of the smoking. I have been called into consultation quite a number of times (hanging around clinics in New York has some virtues after all), have operated successfully upon a floating kidney and an appendix, and the Lord willin' intend to hang out my shingle October 1st.

Sincerely yours,

——, M.D.

COLORADO SPRINGS, COLORADO, September 24, 1898.

OUR PHILADELPHIA LETTER.

[From Our Special Correspondent.]

OPENING EXERCISES OF JEFFERSON MEDICAL COLLEGE AND OF THE MEDICO-CHIRURGICAL—MORE HOSPITAL TRAINS—HOSPITAL BEQUESTS—PERSONAL NOTES—PUERPERAL INFECTION—A CASE OF OSTEITIS AND A CASE OF INTESTINAL OBSTRUCTION.

PHILADELPHIA, October 12, 1898.

PRESIDENT WILLIAM POTTER inaugurated the seventy-fifth annual session of Jefferson Medical College last Monday evening, October 3d, in the hospital building. In a few brief remarks he commented on the power of young men, particularly evinced by the number barely out of their teens who were engaged in the war, and on the energy displayed by them in all branches of the service, a fact noted by him on his trip to Porto Rico on board the yacht "May."

Dr. Edward P. Davis followed with an address in which he urged students to learn "by educating the eye, the ear, and the hand, so as to study patients by reasoning and not by dead memory." He believes that among the lessons learned from the war is the necessity for medical men to enforce respect for their opinions, so that they cannot be disparaged by incompetent officials. In conclusion he said: "Men can well be proud of belonging to a nation which in 100 days put forward the dial of liberty 100 years, and it is well to be an American citizen."

The Medico-Chirurgical exercises were presided over by Dr. John V. Shoemaker, who spoke of the high percentage received by graduates of the school in competitive examinations, and of the increased facilities for

study. Dr. Seneca Egbert welcomed the students, spoke of an increased attendance and gave some practical hints as to the best methods of studying.

The 500 sick soldiers who were expected to arrive on hospital ships this week were finally sent to other ports, but as if to make up for this deficiency, three hospital trains were sent to Camp Meade bringing back nearly 200 men, most of whom had typhoid fever.

On Monday 49 men were brought by the Jefferson Hospital train which consisted of six cars, each arranged as a ward with its physician, head nurse, two assistant nurses and an orderly. The train was under the direction of Dr. Joseph S. Neff and Dr. H. A. Hare, having as assistants Drs. Loux, Salinger, Williams, and Wiggins, with a large corps of nurses, one of whom, chief dietician of the hospital, prepared all food and nourishment on the train.

The other trains were sent by the German Hospital, which brought back 60 men in charge of Dr. Carl Frese, and the Pennsylvania Hospital, which brought 72 men in charge of Dr. Robert Le Conte.

The following bequests are made in the will of Henry Pfander, which was admitted to probate last week: Jewish Hospital Association of Philadelphia, $2000; Jewish Maternity Association of Philadelphia, $1000; Jewish Foster Home and Orphan Asylum of Philadelphia, $2000.

By the will of Colonel Joseph M. Bennett a large amount of property is bequeathed to various institutions in this city, the University receiving nearly $500,000, which, it is directed, is to be used to further the co-education of men and women. Unfortunately, Colonel Bennett's daughter is to contest the will on the ground of undue influence and mental incapacity, and the estate may thus be tied up in litigation for some time.

Dr. George E. de Schweinitz has returned from the Adirondacks, where he spent September, Dr. J. William White, from a bicycling tour of Europe, and Dr. Joseph M. Leidy, from Narragansett. Dr. J. P. Bolton is acting Demonstrator of Chemistry at Jefferson, Dr. Jacob having left the city as a contract surgeon in the army.

Dame Rumor connected the name of Dr. Guiteras with the project of establishing a medical school in Cuba, but he has denied having any idea of severing his connection with the University.

Samuel Dickson, Joseph Harris, S. Weir Mitchell, M. D., Horace H. Furness, and J. G. Rosengarten have been appointed by the Trustees of the University of Pennsylvania a committee to arrange for a memorial meeting to Dr. Pepper. The American Philosophical Society, of which Dr. Pepper was vice-president, has taken similar steps.

"The Prevalence and Prevention of Puerperal Infection in Private Practice" was the title of a paper read by Dr. Shoemaker at the County Medical Society, September 28th. He thinks private practice has failed to keep abreast of institutions in lessening the mortality and described ideal obstetric conditions which can be partially obtained by the use of such simple means as a small scrubbing-brush, bichlorid solution, napkins which can be baked in an oven, and a cheap cotton suit to be worn by the physician. In the discussion Dr. R. C. Norris advocated the use of rubber gloves in septic cases.

Dr. Anna M. Fullerton spoke of the far-reaching effects of gonococci in a paper on "Gonorrhea of the Uterus and Its Appendages."

Dr. W. J. Taylor reported a case of "Intestinal Obstruction by a Band of Omentum," which occurred in a woman aged forty. Celiotomy was performed, a band encircling the intestine and passing through the mesentery was severed, and after the intestine had been opened and emptied of fecal matter, the wound was closed. Two years later obstruction occurred again, the intestine being caught under a band of adhesion.

"A Case of Osteitis Resulting in Circumscribed Suppuration or Abscess of the Lower End of the Tibia" was reported by Dr. J. Ewing Mears. This followed an injury and was variously treated until a skiagraph revealed the true trouble. An incision was made, a groove cut with the chisel, and later the curette was used, the patient making a good recovery. In the discussion Dr. Roberts suggested that relief was obtained by cutting through the periosteum and thus relieving tension. Dr. Barton, on the other hand, believes that the trouble in these cases is more deeply situated and most likely due to osteomyelitis.

MEDICAL MATTERS IN CINCINNATI.

[From a Special Correspondent.]

CINCINNATI, October 11, 1898.

THE Cincinnati Academy of Medicine held its first session of the season, September 26th, Dr. Louis Schwab in the chair. This being the regular evening for case reports and the presentation of specimens, Dr. B. F. Lyle reported a case of tubercular pericarditis and carcinoma of the stomach. Patient colored, aged forty-four; entered the hospital with symptoms of cough and expectoration, weakness, loss of appetite and dyspnea. A physical examination showed dulness in both apices anteriorly and posteriorly, and over the entire lower lobe on right side posteriorly, with bronchial breathing and sibilant râles over these areas. Temperature, 100° F.; pulse, 104; respiration, 36. The patient had lost forty-five pounds in weight, and progressively grew worse. Post-mortem [specimen presented] showed the pleuræ adherent to pericardial sac but slightly to costal pleura; pleural cavity on each side contained one pint of clear fluid. The pericardial sac was obliterated by a tubercular pericarditis, the tubercular tissue or infiltration being one-half an inch thick over the left ventricle and one-fourth of an inch thick over the right ventricle. Anterior and posterior mediastinum filled by tubercular glands. Lungs were infiltrated by a few small tubercles, the dulness being due to the mediastinal glands and infiltrated pericardium. There was a large fungus carcinoma in the pyloric end of the stomach. The omentum was rolled up and tubercular, and tubercles were present in other parts of the peritoneum. Dr. Lyle called especial attention to the meager symptoms, the confusing physical signs, the rarity of such

a specimen, and the absence of any symptoms that would lead to the diagnosis of such an advanced carcinoma of the stomach.

Dr. Magnus Tate reported a case of double pyosalpinx in which adhesions to the intestine were excessive. The main interest in the case attached to an accident during convalescence. Three days after operation the patient fell out of bed, suffered severe pain in the abdomen, and died in a few hours from peritonitis and shock. Dr. Tate stated that he had separated the intestine from the tumors very gently and felt certain that he left no opening into the bowel at the time of operation. Dr. C. A. L. Reed explained the accident by showing how, in these cases, the peritoneal coat may often be removed and the muscularis as well, leaving the mucosa intact. A slight force such as falling out of bed might easily cause a rupture in such a case.

Dr. Edwin Rickets presented an enterolith removed from the abscess cavity in a case of perforative appendicitis, which was peculiar in the fact that the pain began as a simple colic, and rapidly presented symptoms of intestinal obstruction with extreme distention of the intestine. The patient died of general peritonitis, even though an operation had promptly relieved the intestine of gas by puncture and the local condition in and around the appendix. Dr. Twitchell believes that it is always meddlesome surgery to operate in any case of appendicitis in the acme of the attack and that more patients die when operated upon at this time than if no operation is performed. He believes that most cases of colic are mild attacks of appendicitis dependent upon edema and increased peristalsis in the head of the colon and appendix and that the old practitioner's idea of a hypodermic of morphin to relieve the peristalsis and a saline purge to relieve the edema is the proper one for all cases of mild appendicitis. The only cases in which operation is justified are the recurrent ones, which are to be operated on in the interval, and the late cases which have formed a circumscribed abscess.

Dr. Reed raised serious objections to such a view of appendicitis and expressed a conviction that such principles would kill many patients if carried into the practice of surgery.

Dr. Ricketts also presented a gall-stone weighing 388 grains which he had removed from a patient who had suffered from one attack of pain in the region of the gall-bladder many years ago with no further disturbance in this region until the attack of repeated chills, fever, and sweat for which the patient was operated upon. The gall-bladder was full of pus and the patient died from sepsis. Attention was called to the absence of jaundice and biliary colic and the dictum formulated that all cases of biliary colic should be submitted to operative treatment.

Dr. Gustav Zinke also reported a case of empyema of the gall-bladder. His patient had suffered from biliary colic but at the time of operation was almost moribund from a septic condition of the gall-bladder. Operation resulted in the removal of a very large number of small gall-stones, the liberation of much pus and the recovery of the patient. Dr. Zinke stated that this was the first patient he had ever found it necessary to subject to operative treatment, having succeeded in relieving all others by the use of salicylic acid, bicarbonate of soda, and Carlsbad salts. He attributed his success by internal medication to a fortunate series of cases, yet believes that it does argue against Dr. Ricketts' principle of operating in every case of biliary colic.

Dr. M. L. Heidingsfeld reported a case of abscess of the prostate gland which ruptured primarily into the rectum, later into the urethra, and terminated in recovery.

Dr. S. E. Allen reported a case of middle-ear disease in which pain was intense and persistent yet there was no tenderness over the mastoid. A mastoid operation was performed after two weeks with no findings, but with absolute relief from the pain. The patient's temperature continued high, however, and in a few days metastatic abscesses presented in the left thigh, left arm, and right foot. These were opened, and after a long precarious illness the patient recovered.

The appointment of Dr. P. S. Conner as a member of the "Commission to Inquire into the Conduct of the War" appeals to the profession of Cincinnati as a most fitting choice. Dr. Conner is a man who experienced a very unusual service in the Civil War as a surgeon and as a director of hospitals. He is, therefore, entirely familiar with the exigencies of actual service and understands fully the difficulties and possibilities of the field hospital. His constant engagement in hospital work, since the war, at the Cincinnati and Good Samaritan Hospitals, increases the value of his opinion on matters of medical requirements and hospital management. Furthermore, he is a broad man of firm and fearless convictions, and complaints based upon sentiment alone will have no weight in his conclusions. The administration and the American people may feel a deep satisfaction in the appointment of a man whose integrity is unimpeachable.

The medical colleges open this week with the usual events of matriculation and introductory lectures. At the Medical College of Ohio a few changes are noted in the faculty and lecturers. Dr. Samuel Nickels, professor of materia medica and therapeutics, has resigned from active duty and has been made emeritus professor in this branch. Dr. B. Knox Rachford has been chosen by the faculty to fill his place, and Dr. Allyn C. Poole will be transferred from the chair of chemistry to fill that of Dr. Rachford, as professor of physiology. Dr. Stephen C. Ayres has been elected to fill the chair of professor of ophthalmology and otology. Dr. William H. Crane has been made lecturer on chemistry to fill the vacancy left by Dr. Poole. In the absence of Dr. Wolfstein, Dr. Horace J. Whitacre will lecture on pathology and will also conduct the laboratories in pathology.

The vital-statistics report of the board of health for August shows the total number of deaths to be 375, which is the lowest August mortality during five years. Mortality-rate per thousand 11.11. Among the infectious and contagious diseases reported there were: measles 13, diphtheria 16, scarlet fever 7, typhoid fever 26, phthisis 33, pertussis 14.

TRANSACTIONS OF FOREIGN SOCIETIES.

Berlin.

NATURE AND CAUSES OF PERNICIOUS ANEMIA—COMPLETE FATTY METAMORPHOSIS OF A KIDNEY WHICH HAD CONTAINED A STONE FOR MANY YEARS—MYOSITIS PROGRESSIVA OSSIFICANS.

GRAWITZ discussed the difficult subject of anemia not due to external injury nor to disease of any organ at a meeting of the Huffeland Society, May 12th. The clinical picture of pernicious anemia is well known. At autopsy there is generally present a secondary degeneration of the cardiac and renal tissues, as well as of the glands of the stomach and intestine. In the majority of cases there is also a red, so-called lymphoid condition of the marrow of the long bones. The changes in the blood have been frequently described. The red cells become fewer and fewer, until they may number not more than half a million to the c.mm. Macro- and microcytes appear, and especially poikilocytes in great numbers, and nucleated red cells called megaloblasts. These changes of the blood are not confined to pernicious anemia, however, so they do not alone suffice for diagnosis, as do the changes in the blood in leukemia, for instance.

The physical conditions of the blood are not less important than its histological characteristics. If a quantity of it is drawn in a glass and allowed to coagulate the number of red blood-cells is visibly greatly diminished, while the proportion of serum is correspondingly increased. Sometimes as much as ninety per cent. of the contents of the glass after coagulation will be serum. This serum is essentially normal, so that the conclusion may be safely drawn that the disease is one of the cells and not of the fluids of the blood. In certain wasting diseases, on the other hand, such as tuberculosis or some gastric or intestinal affections, there is an atrophy of the blood, similar to that of the muscles, and under such circumstances there is a lack of albumin in the plasma as well as a diminution in the number of corpuscles. The fact that the cells of the blood retain their character in these diseases is probably because the disease exerts no especial influence upon the blood-making organs. These organs suffer from the general anemia, and as this progresses they fail more and more in the required quantity of the blood. In other wasting diseases the blood-producing organs are directly injured, and according to the intensity of this influence the constituents of the blood are altered in character. Such are repeated hemorrhages, anemia after severe infection, chronic suppuration, malaria, osteomyelitis, carcinoma, sarcoma, chronic diseases of the liver or kidney, etc. In marked instances of these diseases the histological examination of the blood may give the same results as in the case of pernicious anemia, but the plasma is very deficient in albumin, and not as that in pernicious anemia, essentially normal. The proof, therefore, is positive that in pernicious anemia there is a morbid alteration of the cells of the blood, and not simply a general marasmic condition. Unfortunately, however, this distinction is not marked with sufficient clearness in all cases to permit one to say from the blood examination alone whether a given case is one of pernicious or of secondary anemia. Far more valuable for differential diagnosis is the course of the disease. In secondary anemia the blood regains its normal character if the cause of the anemia can be removed, as after clearing the intestine of ankylostomata, or the extirpation of a pyloric cancer.

Although the etiology of pernicious anemia is still obscure, the following conditions have been considered to be of significance by different observers:

Long-continued disturbances of digestion leading to chronic catarrh of the stomach and intestine, and constipation.

Pregnancy was once considered an important etiological factor, but this view is not now so strongly adhered to. By pressing on the intestines, however, a pregnant uterus may increase digestive disturbances.

Repeated small hemorrhages in persons whose constitutions are not strong lead sooner or later to a condition in which the blood-building organs are unable to make good the losses, and the red cells reproduced are imperfect in quality and of insufficient quantity. Therefore the marasmic conditions grow constantly worse. In the light of the best evidence at present attainable this is the correct explanation for most of the cases of pernicious anemia.

Constitutional syphilis is also an important causative factor, not on account of the action of any virus, but because of the cicatricial changes produced by it in various organs, especially in the marrow of the bones.

Conditions affecting the general health, such as poor food, bad air, too frequent pregnancies, shock, and other nervous disturbances may also help the individual into a condition of pernicious anemia.

Chronic poisoning, especially with repeated small amounts of carbon monoxid, should also be mentioned.

There are, too, cases of anemia caused by the bothriocephalus and by the ankylostoma which do not disappear with the removal of these parasites.

One ought to be on his guard against the careless habit of calling all fatal cases of anemia "pernicious," and all cases which recover "simple" anemia.

At the Medical Society, July 20th, ZONDEK showed a preparation of a kidney which, owing to the presence of a stone for eleven years, had undergone complete fatty metamorphosis. The organ was, when removed, about twice the natural size, and nowhere was any parenchyma to be observed. The ureter was much enlarged and thickened, and the pelvis contained two stones. The symptoms at the time they were first noticed, eleven years before the nephrectomy was performed, were those of a stone in the kidney, with intense pain and fever, compelling the patient to remain about eight weeks in bed. Then for years there was very little trouble, but more recently the pains in the loin recurred with such severity as to lead to the operation indicated.

JACOBY showed a man, aged twenty years, who suffered for eight years with pains in his neck of a rheumatoid character, and which were followed by the calcification of these muscles. These had been in this condition

for four years. Later bony areas appeared in the masseters and in the muscles of the back. The clinical diagnosis was confirmed by the Röntgen-rays. The parts affected were almost immovable.

Virchow showed a patient, also a man, who had been suffering for years from a progressing myositis ossificans, until a large part of the muscles of the back and a part of those of the limbs were involved. In portions of the body where there are no muscles, the deposit of lime-salts also occurred. Thus an exostosis had formed on the side of the great toe, and had grown until it looked almost like a sixth toe, although it was not attached to the bones.

SELECTION.

NOTES ON OPHTHALMOLOGY IN VIENNA.[1]

By REGINALD E. BICKERTON, M.B., Ch.B.(Vict.).

The following remarks apply more particularly to the operative methods and procedures followed in Professor Fuchs' Clinical Department in Vienna, and are all written from personal observation, in most cases as one of the assistants.

ASEPSIS AND ANTISEPSIS.

Sterilization of Hands and Dressings.—All hand towels, cotton-wool for sponging, dry and wet, for dressings and pads, are first sterilized in a hot-air sterilizer for at least one hour, usually two. During the process the cotton-wool for sponging is contained in cardboard cases: the cotton-wool pads used for dressings immediately after operations, in porous porcelain jars; the towels and gauze used for dry sponging being put in round metal cases with perforated tops and bottoms. After sterilizing, these dressings are never touched by hand again till the operator places the dressing in position after the operation. The cotton-wool which is used for wet sponging is put into corrosive-sublimate lotion (1–5000) by means of a pair of sterilized forceps. After washing their hands and sterilizing, more or less, with corrosive-sublimate lotion 1–1000, the operator and his assistant dry their hands on a sterilized towel, which is then laid across the patient's chest close up to the chin, so that, if any instrument are laid upon it, they do not necessarily become infected.

Irrigation Lotions. — Corrosive-sublimate lotions of two strengths (1–2500 and 1–1000) are used. Carbolic-acid lotion (1–40) is used only for laying instruments in and for boiling and keeping silk ligatures in. Saline solution 1–1000 is used for irrigating conjunctival sacs before operation. Separate irrigation nozzles are kept for purulent cases and for trachoma cases. Boracic acid (1–500) was used in one case for syringing out the anterior chamber, the wound having become purulent after an operation.

PREPARATION OF PATIENT.

Treatment Previous to Operation.—All cataract cases are kept in the hospital for a day before the operation is undertaken. In many unclean-looking cases the eye to be operated on is syringed out with corrosive sublimate (1–2500) the night before the operation and a pad applied. The syringing is repeated on the morning of the operation, and a simple rubber pad is put on without any further dressing.

Immediate Preparation for Operation.—When the patient is on the operating-table, immediately before the operation is commenced, the eye is again thoroughly well sponged and irrigated, either by the operator himself or his assistant. If the case happens to be a particularly unclean-looking one, the eyebrows, lids—especially the ciliary margins—and surrounding skin are well washed with a neutral soap and sponged with corrosive sublimate, then dried. In all cases the upper lid is everted and the palpebral conjunctiva well sponged with cotton-wool dipped in sublimate—1–1000 first, then 1–2500—particular care being taken to cleanse thoroughly the fornix conjunctivæ. The lower lid is then cleansed in a similar manner, the lacrimal sac being always pressed upon to make certain that there is no retained secretion or abnormal secretion which might regurgitate under the slight pressure of the pad after the operation. The lids are then allowed to fall back into their normal position. Irrigation of both conjuntival sacs is next performed by means of a flattened irrigation nozzle, the fluid used being contained in glass bottles placed some ten feet from the floor. Saline solution is usually employed, the nozzle being placed well up into the fornix. A thin layer of sterilized gauze dipped in sublimate lotion is now placed over the patient's face, eyebrow, and nose, a hole being made previously in it for the eye. These preparations apply to all operations.

INSTRUMENTS.

For Aseptic Cases.—All instruments, except those reserved specially for purulent conditions and trachoma, are kept in a glass instrument-cabinet with glass shelves and metal racks for holding them. Knives and all cutting instruments are kept in the same way, and not in separate cases, and they do not seem to become rusted from exposure.

For Septic Cases.—All instruments used for abscesses, Saemisch's operation, and purulent conditions generally, are kept in a separate wooden box, being well boiled both before and after every operation. Instruments used for trachoma cases of any kind, whether for lid operations or for bulb operations, also Knapp's roller forceps, are kept in a separate wooden case, and not in the general instrument cabinet.

Preparation of Instruments.—The instruments about to be used for any operation are placed in a small metal rack with their points and part of the handles projecting; the whole rack with instruments thereon is then placed in a tin sterilizer containing two liters of boiling water with five grams of sodium carbonate dissolved in it to prevent rusting. They are boiled in this for two minutes, or never less than one minute. A separate sterilizer is kept for abscess and trachoma instruments, similar to that used for non-infective operations. Immediately before use the rack with instruments on it is taken out of the

[1] Reprinted from the *British Medical Journal*, September 17, 1898.

sterilizer by means of a wire carrier, and the whole thing placed on a sterilized porcelain plate and covered with a double layer of sterilized gauze dipped in corrosive-sublimate lotion. The operator and his assistant are the only persons then who touch the instruments, which are used usually while still warm. If any unusual number of instruments are required they are first sterilized by boiling, then placed in carbolic-acid lotion (1–40), and used wet. All the knives used, and most of the other "handled" instruments have bone handles, and the boiling for this length of time seemed to have very little effect in loosening the handles. The handles of the instruments used for abscesses always became loose sooner than any others, as these instruments were boiled for a longer time both before and after each operation, sometimes for half an hour after the operation.

SUTURES AND NEEDLES.

Sutures.—Catgut is used for all conjunctival sutures, and various thicknesses of silk for plastic operations, adjustments, Snellen's sutures. Catgut sutures are kept in a spirituous corrosive-sublimate solution, and are not boiled or put into any watery solution before use, but simply laid between the folds of sublimate gauze. The silk used is first wound on to a big reel, and the reel and silk then boiled for an hour and a half in carbolic lotion (1–40.) It is then removed from the big reel on to smaller glass reels, on which it is kept and from which it is cut off as required. These smaller glass reels are then boiled for another hour in 1–40 carbolic, and are afterward transferred to glass dishes, in which they are kept in 1–40 carbolic. These repeated boilings have very little effect in making the silk lose strength.

Needles.—The needles used have patent and split eyes, which facilitate threading. The needles about to be used are first boiled, then the silk threaded, and the needle, together with the silk again dipped in boiling water for half a minute. They prove absolutely aseptic, and suppuration never took place round a suture.

COCAIN AND ANESTHETIC SOLUTIONS.

A three-per-cent. solution of cocain is used for all operations where cocain in required. A separate bottle and drop tube are kept for all trachoma cases, the bottle being labeled "trachoma" and colored. Another bottle labeled "abscess cocain" is kept for all abscess and purulent cases. Thus the risk of carrying infection by contact of the drop tube or bottle from infective cases to non-infective cases is eliminated. All the cocain used is in sterilized solution, and all cocain used during an operation, after an incision has been made into the eyeball, is, to commence with, a sterilized solution put in sterile drop bottles, which are then put in a glass beaker uncovered; the beaker is then placed in the hot-air sterilizer for an hour, then taken out and a solution of acid thymol, 3–1000, poured over the bottles till they are completely submerged; they are kept in this, and no one touches them without first sterilizing his hands. Atropin and eserin are kept in the same way, being in drop bottles with "turn-off" stoppers. Cocain is instilled a quarter of an hour before any operation, and no fewer than four times during this time.

Hypodermic Solutions.—The solution of cocain used for hypodermic injections is of the strength of three per cent. The syringes and needles are kept in glycerin, and filled with glycerin when not in use; this prevents rusting, and also the entrance of extraneous matter into the barrel of the syringe. Cocain injections are employed in extirpation of the lacrimal sac and gland, in operations for trichiasis, entropion and ectropion, Panas' and Spencer Watson's and Von Arlt's operations for advancement of muscles, for meibomian cysts, styes, Knapp's roller forceps operation for trachoma, and in all small plastic lid operations. The quantity injected is 15 and 20 and 30 c.mm., and in the ten months during which I witnessed several operations performed every day I never saw any ill after-effects from its use. A solution of cocain with morphin is also occasionally used. Separate hypodermic needles are kept for trachoma cases. Before use the needles are in all cases held in boiling water for half a minute. General anesthetics, pure chloroform, pure ether, and A. C. E. mixture are employed. Skinners' mask is used in every case.

THE OPERATIONS.

Position of the Operator.—The operator stands in front of the patient, rarely behind. Right eyes are operated on by the left hand, and vice versa.

Light.—Operations are performed by daylight in most cases. When the light is very bright it is admitted from above the level of the operator's head only, so that the light comes from above and not directly from the side; by this means much of the corneal reflection is done away with. A small hand electric lamp is usually used for discissions, and when the daylight is insufficient.

Speculum.—This instrument is not usually used in cataract extractions or iridectomies unless the patient is very refractory. The lids are held apart by the assistant, and allowed to close immediately the primary incision is completed, and also between each step of the operation. The speculum generally in use has an automatic spring, without adjusting screw, and tends to separate the lids always wider and wider apart, in this way causing undue pressure on the eyeball. Desmarre's lid elevators are used in enucleation and exenteration of the orbit.

Cataract Extraction.—The complete operation is always done at one time. A large conjunctival flap is made. The operation with iridectomy is performed slightly more often than the operation without; for example, out of 400 extractions 206 were performed with iridectomy. The number of cases in which prolapse of the iris occurred was very small. Graefe's knife was always used. The lens capsule was opened by means of capsule forceps having teeth on the under side of bent arms. The lens entire, in its thickened capsule, was occasionally removed in this manner. If the forceps failed to open the capsule the cystotome was used. The lens was expressed by pressure applied by means of the finger through the lower lid, the edge of the lid being used in much the same manner as a cataract spoon. The iris almost invariably re

quired reposition after the lens had been removed, when the operation had been done without iridectomy. One or two drops of eserine solution (one per cent.) sterilized were instilled after reposition of the iris and of the conjunctival flap. This was done only in operations without iridectomy. Both eyes were covered by soft dry wool pads; no head bandage was used, but a Snellen's aluminum shield was placed over the operated eye. If any difficulty was experienced in removing the lens, or of the vitreous presenting before it was removed, a small pair of forceps with curved arms terminating in each in a small hook was used as a vectis; the forceps were passed behind the lens, closed, then opened and drawn forward, the two hooks being thus driven into the lens, and holding it securely while it was drawn out of the wound. In some cases the vectis (Weber's) was used in place of the hooked forceps. In some four or five extractions a couple of very fine silk sutures were used after the operation was completed, with the object of bringing about union of the conjunctival flap more rapidly, and of lessening the amount of astigmatism after the operation. The results, however, were not considered sufficiently satisfactory to warrant a continuance of the practice. The small electric lamp was used invariably after the lens had been removed to examine for any soft matter left behind; if any was seen Daviel's spoon was introduced, and an attempt made to remove it,

Discission.—Discission for high myopia was never done for a less degree than 15 or 16 dioptrics. The speculum was used in the majority of cases; a crucial incision was made through the anterior lens capsule with a somewhat sickle-shaped cutting needle, cutting both in concavity or convexity (Knapp). In one of the clinics discission in the above cases was always performed by means of a Graefe knife, held on the flat; that it to say, with the blade parallel to the plane of the iris. The knife was introduced into the anterior chamber, and a single vertical incision made through the whole length of the anterior capsule of the lens if possible. It was held by the supporters of this method that the wound so made in the cornea healed better, and left a slighter scar than that left by the needle.

Discission of secondary cataract was frequently done *per scleram*, but also *per corneam*, with one needle and with two. The operation *per scleram* was performed well behind the ciliary region with a single needle, and gave very good results in cases of obstinate thickened capsules. In no case did any severe reaction follow the operation. In some cases of very much thickened capsule, an incision to remove this was made with a keratome as for iridectomy in the margin of the cornea, the capsule seized with a pair of capsule forceps, as used in extraction, and torn out perhaps with the help of a cystotome. In cases of occluded pupil, the operation with a Graefe's cataract knife as described below — iridotomy — was sometimes performed.

Punction and Linear Extraction.—Punction for removal of swollen-up partially absorbed lens matter, following a previous discission, was done usually on the third or fourth day, when the tension had become slightly raised. A very small incision was made usually at the lower and outer margin of the cornea, with a narrow keratome. Much of the lens matter came out at once with the aqueous, which was let out as gently and as slowly as possible. A Daviel's spoon was then placed in the wound and pressure gently applied backward, more lens substance escaping. After a short pause, during which the anterior chamber was reforming, the spoon was again introduced and more of the lens matter expressed. If necessary a second spoon was used to express the lens from above down toward the wound. The vitreous not infrequently filled the anterior chamber before all the lens matter had been removed. By this operation the period of absorption of the broken-up lens is, it is contended, very much diminished, the risk of acute increase of tension in the eyeball done away with, and very little, if any, corneal astigmatism results.

Syringing Out the Anterior Chamber.—This operation was performed in only one case, in which suppuration had taken place in the anterior chamber following on a cataract extraction. The wound was reopened, and the bent and flattened nozzle of a syringe made for the purpose introduced into the anterior chamber, which was then thoroughly syringed out with a sterilized solution of boracic acid, 1 in 500. This, though performed two or three times, had very little, if any, effect in checking the course of suppuration.

Iridectomy.—This operation was performed either with a Graefe knife or a keratome. The incision with the latter was always begun in the sclera. The iris was drawn into the wound with small iris forceps, and cut off by means of De Wecker's forceps scissors. In two cases following an iridectomy performed in cases of glaucoma, intraocular hemorrhage took place, the lens, vitreous, and entire contents of the eyeball being gradually extruded through the wound, in spite of considerable pressure applied by means of pads and a head bandage. The patient suffered great pain at the time.

Transfixion for Iris Bombé.—This operation was performed with a broad Graefe knife held on the flat, that is, parallel with the plane of the iris (normal), and introduced from the outer side in the cornea. Two incisions were made through the iris on both sides of the pupil, four small holes in all being made. Care was taken not to injure the lens or lens capsule while the point of the knife was passing in front of the pupil.

Operation for Synechiæ.—This operation was performed with a view to loosening adhesions between the iris and back of the cornea. Lang's synechiæ knives were always used. In two cases in which extensive and very firm adhesions were present, most excellent results followed, the iris after the operation being quite unhindered in its movements, and the pupil later on becoming very nearly normal in shape.

Operation against Commencing Staphyloma with Incarcerated Iris.—This operation, which I have twice witnessed, consisted in the trephining of the cornea with the part of the iris involved, and the complete removal of the commencing staphylomatous part of the cornea, with the piece of iris. The loss of substance in the cornea

was then filled up by a piece of healthy cornea of similar size trephined from another eye, which was about to be enucleated. In one case the piece of transplanted cornea, which retained its transparency to some extent, was slightly raised above the surrounding cornea. In both cases the iris was successfully freed, and the cornea given a much greater chance of retaining its shape and nutrition.

Operation for Prolapsed Iris after Injury; Ulcer.—The staphyloma resulting in these cases was carefully punctured by a conical sharp sound, the aqueous allowed to flow away as gradually as possible, the iris then freed all round its adhesions to the corneal wound, drawn out from the wound as far as possible, and cut off with De Wecker's iris scissors. As much of the iris as could be got hold of through the wound was then seized, drawn out, and cut off, until it was in every part completely out of danger of again becoming incarcerated.

Iridotomy.—This operation was always performed by means of a Graefe knife, somewhat narrow, held and introduced through the cornea with the blade at right angles to the corneal surface and with the cutting edge backward, that is, toward the interior of the eyeball and iris. The point was entered through the cornea from below, and advanced in the anterior chamber till it had reached the opposite limit of the chamber. The handle was then brought upward, thus depressing the point and blade, and the iris and occluded pupil cut through; the knife was then withdrawn perpendicularly, cutting the iris completely through immediately below the point of puncture. The very best results were thus obtained, and the reaction was slight. This was only done in cases in which the lens was absent; if any of the lens happened to be present, as in many complicated cases, an attempt was first made to extract it by means of an iridectomy and the usual operation; the pupil, if still occluded, was afterward dealt with in the above manner. Capsulotomy after this method was done also in cases of adherent, thick, secondary cataract.

Optico-ciliary Neurotomy.—The rectus internus was divided and sutured, and the optic and ciliary nerves cut through with a pair of strong, curved, blunt pointed scissors. The eyeball was meanwhile rotated outward as much as possible. The internus muscle was then sutured to its tendon, unless it happened that the bleeding was very great, with great protrusion of the eyeball. The bleeding and protrusion in most cases seemed to be considerable.

Enucleation.—This was always done after the Vienna method. No muscle hook was used, but simply two pairs of large straight scissors, with a small curve, one pair of forceps, a strong catgut suture, and a pair of Desmarre's lid elevators. The operation was done from the left always. In the case of the left eye the externus muscle was first cut through, and the eyeball held in the forceps by means of this muscle's attachment throughout the operation. The internus muscle was last severed, the last after the optic nerve had been divided. With the right eye the internus was the first muscle divided, and the eyeball was held by means of its attachment, the externus muscle being the last cut through, after the optic nerve. A single thick catgut running suture was then placed in the conjunctiva, and just before it was drawn tight and tied, the cavities were well syringed out with corrosive sublimate solution (1 in 1000). Iodoform powder was then dusted in and a dry dressing and head bandage applied.

Mule's Operation.—This was very rarely performed, some three times during ten months. The artificial vitreous used was not spherical, but a flattened, four-cornered, silver-gilt, spheroid, with the corners well rounded off. The cornea and sclera were cut away just behind the ciliary processes, and the scleral cavity scraped out with an ordinary Volkmann's scoop. The interior was well irrigated with corrosive sublimate (1 in 1000), and the wound closed, after inserting the artificial vitreous, by a catgut suture passed through the conjunctiva and sclera at the same time. Dry dressings and a somewhat tight head bandage were applied. Simple evisceration of the globe, without the insertion of artificial vitreous, I never saw performed.

Tattooing for Leucoma. — This operation was performed in the ordinary manner in many cases, but in some the trephine was used to remove the epithelium and upper laminæ of the cornea. A somewhat large trephine, equal to the size of the pupil of the other eye when at rest, was chosen. The piece so marked out was then dissected off, taking as little of the corneal laminæ as possible, and placed on cotton-wool. A few drops of a solution of cocain (five per cent.) were then dropped into the wound in order to stop the bleeding. When this had ceased the India ink was applied with a spatula, and well rubbed and scraped in by the point of a Graefe cataract knife, taking care that the edges of the trephine wound were not notched in so doing. The trephined piece of cornea was then replaced in the wound, but this procedure did not appear very satisfactory, as some bleeding invariably took place under the piece of replaced cornea, raising it up, and it very soon shriveled and dropped off. The resulting appearance, even if this did take place, was very good indeed, the sharply defined margin of the tattooed portion giving quite the appearance of a normal pupil.

Extirpation of the Lacrimal Sac. — This was an operation of every-day occurrence. A cocain injection only was employed. An incision almost vertical in direction was made through the skin on the site of the sac; the wound then kept open by means of Müller's spring wound dilator, and the incision deepened until the internal tarsal ligament was reached. This was then cut through with scissors and the sac dissected free all round; the upper end was raised forward from the bone with forceps and the sac well cleared of all its attachments, and in most cases of inflammatory adhesions. The lacrimal duct, or rather the mucous membrane lining it, was cut through as deeply as possible with scissors, the duct being put on the stretch meanwhile. The cavity thus left by removal of the sac was well scraped out with a Volkmann's small scoop, syringed out with sublimate lotion (1–1000), iodoform dusted in, and the edges of the skin incision united by three or four silk sutures. Union by first intention was as a rule secured; but, if any of the sac had been left behind, this did not occur, and often rendered a second

scraping necessary. This operation was done invariably when ulcer serpens was present. Bowman's sounds were used, but lacrimal styles never.

Removal of Lacrimal Gland.—This was performed in many cases after the above operation. The theory was that the lacrimal gland should not secrete more than could be removed by evaporation. If it did secret more, then it was held to be abnormal and was removed. The operation was performed through the conjunctiva, the cavity being scraped out afterward, and the conjunctiva sutured by two or three catgut sutures.

Knapp's Roller Forceps Operation.—In trachoma cases in which the palpebral conjunctiva was very rich in trachoma granules, the upper lid was everted and cocain was instilled, as well as injected in several places under the palpebral conjunctiva. The granules were then punctured with the point of a Graefe knife, the roller forceps applied, and the contents squeezed out.

Extraction of Steel and Iron Foreign Bodies.—When such were lodged in the interior of the eyeball, and known to be present, the patient was at once taken to the big electromagnet (Haab's), and the piece of metal drawn into the anterior chamber if possible, and then removed by a corneal incision and the smaller point of Hirschberg's magnet. When it was not known for certain whether a piece of metal was present or not, the patient was taken to be tested by means of the sideroscope, which appeared to give only very doubtful results. With Haab's magnet the diagnosis was made absolutely certain, and in many cases the piece of metal could, when it was lodged behind the iris, be actually seen being drawn forward. If the piece of metal were lodged in the posterior chamber, it never came forward throughthe lens, unless there happened to be a hole in the posterior lens capsule, but always slipped round it, till it reached the suspensory ligament, which it tore through, with a sufficiently powerful magnet, and came up against the iris. From this position it was with a little manipulation readily brought forward into the anterior chamber, where it fell. Since this magnet has been in use, it has never failed to extract a splinter of iron or steel from the interior of the eyeball, no matter how deeply it has been embedded.

Sclerotomy.—Both anterior and posterior sclerotomy were constantly performed. Posterior sclerotomy after Priestley Smith's method was invariably performed on glaucomatous globes, in which intra-ocular hemorrhage might be expected to occur if an iridectomy were undertaken.

Plastic Operations.—Of the many and various plastic operations I will not attempt any description, as the number is far too great, due to the great amount of trachoma, the resulting scarring and deformities being relieved, or attempted, by all the various typical and atypical operations which suggest themselves. Thiersch's skin-grafting is a very favorite method in the case of extensive burns.

Number of Operations.—Of the total number of operations of all kinds performed, some idea may be gathered from the fact that between November 1, 1897, and July 9, 1898, 1499 operations were performed and written up in the operation-books, 400 of which were cataract extractions. This number does not include such operations as scraping hordeola, meibomian cysts, etc.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held October 6, 1898.

THE President, E. G. JANEWAY, M.D., in the Chair.

The paper of the evening, entitled

NOTES ON SURGERY IN THE RECENT WAR

was read by MAJOR WILLIAM DUFFIELD BELL, Surgeon of the Seventy-first Regiment, New York Volunteers. (See page 488.)

DISCUSSION.

DR. JOSEPH D. BRYANT: Although I was not on the battle-field, I have had some experience with these cases, having come in contact with the patients after their transportation to this city, and I have been struck by the marked characteristic of the wound made by the Mauser bullet—the widely differing effect which it has upon the hard and soft parts. This was particularly brought to my notice by two instances. In the first the man received a bullet in the upper third of the humerus. It made its exit posteriorly and plowed through the chest-wall. This happened four weeks before I saw him. The wound in the arm had closed, with no history of the escape of pus or bony fragments, and there were no evidences of such having taken place. There was, however, considerable thickening of the parts, indicating that there had been not exactly splintering of the bone, but what might be called *pulverization*. There was some union—enough to obscure any evidence of exposed bony fragments—but false motion was well marked. But little or no pain was present. The wound of the superficial soft parts of the thorax made by the bullet in its exit had not healed. It looked as if it had been made with a red-hot iron, or, to put it more clearly, it resembled a slough with a distinct line of demarcation, the edges of the wound being ragged and torn. This is one of the characteristics of the Mauser bullet. The patient eventually made a good recovery.

The second case was that of a lieutenant of the regular army, who informed me that he was one of the first wounded, and consequently one of the first whose wounds were dressed, and, therefore, considered himself especially fortunate. He was wounded in the upper third of the femur, the ball passing through the limb and grazing the opposite one after making its exit. Four weeks had elapsed since the injury when he came under my care. There was about one and one-fourth inches of shortening and considerable false motion, which I accounted for by the division of the soft parts and also by the fact of his being brought from Cuba on one of the transports. He told me that when the wound was received there was but little hemorrhage, comparatively speaking. I had the limb put up in plaster of Paris and kept there for four weeks, at the end of which time the bone seemed to be firmly united. The patient was cautioned to be careful, but within forty-eight hours he began to complain of pain

at the seat of injury. Later this pain increased and false motion was detected. This may be explained by the bad physical condition of the man, who had been subjected to the detrimental influence of camp-life at Santiago, and it may also have been due to extensive injury to the bone.

DR. JOHN H. GIRDNER: I would like to ask the author if he noticed any difference in the character of the wounds caused by the Mauser bullet fired at short and long range.

DR. BELL: Of course the wound is different when the bullet is fired at short range. At one time we sent word to the Spaniards that if they did not stop using explosive bullets we would use them ourselves. They sent back an answer to the effect that we must be already using them ourselves, as evidenced by the wounds their soldiers were receiving. The effect of a bullet fired at 500 yards differs from that fired at 800 yards. At El Caney nearly all of the wounds were received at 400 yards, and at San Juan before the troops got within 800 yards of the enemy. In the case of the wounds received at El Caney the bones were splintered—in some cases to a state of pulp. At San Juan the bullets passed through a bone without splintering it. In one case a man was shot through the head, the bullet entering behind the ear, through the mastoid process, and coming out near the spine. He bled profusely, but was all right within a week. Wounds of the abdomen were remarkably well borne. The patients did not suffer from shock, no operation was performed, yet the patients invariably recovered. In one case which came under my observation there were eight perforations, and yet the man was able to walk four miles to the hospital. Operation was proposed, but as there was no shock and no hemorrhage it was suggested that we wait ten or twelve hours. During this time the patient disappeared. He was walking about three days later and has had no trouble since. Wounds of the lung were followed by profuse expectoration but no other symptoms presented, unless there was also fracture of the ribs causing perforation.

A peculiarity of the Mauser bullet is that it never lodges in bone but always passes through it. Even a spent ball will do this. It frequently passes through one man and strikes another, and even a third. It makes a very pretty wound. I know of one case in which a man was shot through the liver and another in which the bullet passed through the thorax, and both men recovered. The wound caused by the Mauser bullet is in striking contrast to those made by the explosive bullet fired at short or long range from a Springfield rifle. When the latter strikes a tree it digs a hole in it. When it strikes a man's head it leaves a wound like that make by a shell.

In regard to the absence of hemorrhage in injuries of the soft parts, this is explained by the fact that the blood-vessels seem to recede from the bullet. In one case in which a man received a bullet in the groin, passing through the hip back of the joint, it seemed as if it must have severed the femoral artery, but it was found that the vessel had shrunk into the wound. This peculiarity was noted by five or six surgeons. I have also noticed that wounds of the soft parts heal at once. When the first dressing is removed on the third day healing has already begun.

DR. MONA LESSER: While in Cuba I had 181 cases of this kind in my charge. Of these 161 required surgical operations of more or less importance. The rest were clean wounds, either through the skull, the thorax, the abdomen, or the extremities. Among the most remarkable were 18 men who were shot through the skull. In one instance the man was shot through the parietal bones, causing profuse hemorrhage and the patient was brought to the hospital paralyzed in both the upper and lower extremities. He was immediately trephined and much to the surprise of all, he was able to use his arms and legs, showing that the trouble was due to pressure from blood-clots. I have since learned that the patient came to this city where he was operated upon by a prominent surgeon and died. Another interesting case was that of an officer who is now superintendent of the West Point Academy. He received a bullet which entered a little below the right eye and made its exit on the left cheek. He was brought to the hospital blind. The muscles surrounding the right eye were completely paralyzed and he could barely distinguish a light when it was held directly in front of him. He has since recovered the use of one eye. One of the officers of the Ninth Cavalry received a bullet in the head which fractured the parietal bones. He was dazed when brought to the hospital but made a good recovery after the depressed bone was raised. The great majority of the wounds were clean and the only dressing applied was a piece of plaster. I saw ten or twelve cases in which a bullet had passed directly through the abdomen from before backward or from side to side. In two cases intestinal hemorrhage occurred on the first or second day but in each instance the patient recovered. I also saw several cases—two or three—in which the bullet passed through the neck. These were clean wounds. Wounds of the extremities were usually accompanied by compound comminuted fractures, and this was always the case if the bullet was fired at close range. The treatment given was very simple and recovery ensued except in those cases in which the bone was reduced to a pulp. I saw one such case operated upon by Dr. Nancrede. It is a remarkable fact that of the 1415 patients treated at Santiago during the first week in July only four had died up to July 7th. Surgical fever was almost unknown in the camp. In cases in which a bullet was received in the forearm or leg, one bone of the extremity was badly fractured and the other very little. It was generally necessary to remove small portions of bone, leaving those which were attached to the periosteum, and the patients did remarkably well. The American soldiers seemed to do better than the Spaniards. Those of the latter who received their wounds in the naval battles were very badly injured. There were no clean wounds among them. Resection was not possible—it was either amputation or nothing. Among those wounded on the field there were many in whom large vessels were injured. These were ligated and most of the patients recovered. Twelve such cases were treated between July 2d and 3d. Five of these, Spanish soldiers, died within the first twenty hours—one from tetanus, one

from yellow fever, and three from septicemia. They had been lying several days unattended. The most remarkable part of it all was that most of the injured were able to walk miles to the hospital with nothing but a little pad on their wounds. I am sure that many hundreds would have died but for these little pads with which their wounds were dressed on the field. The Spaniards did not have these pads. Taking it all together we must come to the conclusion that the Mauser bullet, when fired at long range, is a very humane one. I went to the war expecting to see a great deal of operating, but I saw very little. There were a few resections done at Siboney and I saw six amputations—two of the lower extremity at the thigh, two below the knee, one of the arm, and one of the hand. Most of the wounds were not of a severe character and required the most simple treatment. Recovery generally followed if this treatment was promptly given on the field. Major Bell has told you how well this was done, and I can only add that it is impossible to give too much praise to the army and volunteer surgeons for the good work they did.

THE PRESIDENT: I would would like to ask the author whether he saw much tetanus among the wounded. I have been told by Cuban medical students that idiopathic tetanus is not uncommon in their country,

DR. BELL: I saw no tetanus in Cuba but I believe a case was reported as occurring in Florida. That we did not have it in Cuba is probably due to the great care with which wounds were treated on the field. Antiseptic solutions were prepared with boiled water and in all the field hospitals scrupulous cleanliness was strictly carried out. The antiseptic pads which were applied on the field were also of great service in preventing wound infection.

DR. DANIEL M. APPEL, U. S. A.: I have had charge of the sick and wounded who were sent to this city on the transports. They were immediately sent to the various city hospitals and I have seen them constantly. They are beautiful cases so far as the results are concerned. The few deaths which have occurred were of men wounded in the abdomen, upon whom operation was necessary on account of extensive laceration of the viscera, such as the liver, and in whom a fatal result was to be expected.

AMERICAN PUBLIC-HEALTH ASSOCIATION.

Twenty-sixth Annual Meeting, Held at Ottawa, Canada, September 27, 28, 29, and 30, 1898.

THE President, DR. CHARLES A. LINDSLEY of New Haven, Conn., in the Chair. The Association met in the Railway Committee Room of the House of Commons.

DR. JOHN L. LEAL of Paterson, N. J., read a paper, entitled

AN OUTBREAK OF TYPHOID FEVER DUE TO AN INFECTED WATER-SUPPLY.

He dealt with the pollution of water as supplied to the residents of Paterson. This outbreak established the fact that the germs originating from a single case of typhoid fever might infect even a large body of water, so as to reproduce itself among those dependent upon the same water for their public supply, even though the supply be taken at a point some distance from the focus of infection.

THE CAUSE AND PREVENTION OF INFECTIOUS DISEASES,

was the title of a paper read by DR. PETER H. BRYCE of Toronto. He said that infectious diseases must be divided according to their mode of causation, their growth and development. With reference to methods for suppressing outbreaks of diphtheria in a community, in a number of municipalities in Ontario where the disease appeared, principally among school children, the practice was introduced of a morning visitation by the Sanitary Inspector to all the public schools to obtain a list of the children that were absent. The homes of these were promptly visited and when any evidence of malaise and sore throat was present the parents were at once required to send for a family physician and have a swab taken and forwarded to the medical officer by the afternoon. These were sent at once by mail to the laboratory and the patient isolated, until an answer by telegraph of the result of the examination was received. When the cases proved to be diphtheria, the patient was isolated until further examination proved the freedom of the throat from bacilli. The children of the household were kept from school and the public, and the homes subsequently disinfected with formaldehyd when the children had not been removed to the hospital.

ANNUAL ADDRESS OF THE PRESIDENT.

DR. LINDSLEY said that the primary and ultimate purpose of the Association is the protection and preservation of public health. He dwelt at length upon the rapid progress that medical science has made during the past few years. Provincial, State, and local boards of health are coming to be recognized everywhere as necessary forces for the safety and well-being of all civilized communities. The movement has gained an impetus which cannot be resisted. It must go on, nurtured, sustained, and guided in its progress by the skill, judicious enterprise, and intelligent energy, so characteristic of the people of North America, until, in practical utility and successful results, it will have no superior among the nations of the earth.

DR. HENRY B. HORLBECK of Charleston, S. C., presented the

REPORT OF THE COMMITTEE ON THE ETIOLOGY OF YELLOW FEVER.

Reference was made to the labors and experiments of Sanarelli. This scientist claims that he has found the bacillus icteroides in fifty-eight per cent. of the cases examined by him, and believes that the reason of his non-success in finding it always is due to incidental causes. Dr. Horlbeck referred to the investigations of Drs. P. E. and John I. Achinard of New Orleans, who have studied the subject of yellow-fever in relation to diagnosis by the Widal method. In fifty cases of yellow fever, agglutination with cessation of motion was obtained in more than seventy per cent. of the cases, the reaction being as characteristic as in typhoid-fever cases. The work of these

gentlemen demonstrates the practical value of serum diagnosis. It may be utilized as early as the second day. The dried-blood method of Dr. Wyatt Johnston was perfectly satisfactory. The serum diagnosis of yellow fever should be instituted in all countries wherein the disease may exist endemically, or which may be occasionally visited by epidemics. It is especially valuable at the beginning of epidemics in the diagnosis of early and doubtful cases. While the bacillus of Sanarelli is not the inevitable cause of the disease, it is still of sufficient importance to warrant its closer study.

DR. E. LICEAGA of Mexico, said that yellow fever has been known to be transmitted through the bagging that carries, corn, sugar, and coffee. It has also been transported by the clothing of persons who had been attacked by the disease. Another material which serves to propagate yellow fever is the ballast which is shipped by the vessels in Vera Cruz after having landed their cargo. The propagation of yellow fever through the medium of water is not well established, although it is a probable cause. The general conditions that favor the transmission of the disease are humidity, heat, and want of light and ventilation. Mosquitoes are known to carry the germs of the disease.

DR. ERNEST WENDE of Buffalo, read the

THE REPORT OF THE COMMITTEE ON THE CAUSE AND PREVENTION OF INFANT MORTALITY.

He said that several scarlet fever and diphtheria epidemics have been averted in Buffalo by promptly tracing the infection to a particular milk-supply. Most satisfaction has been found in the general condemnation of the long tube, death-dealing nursing-bottle. Buffalo, through its city health department, has interdicted the use of the long rubber tube, as a consequence of which a suit is now pending in the courts to test the validity of such action, this suit being prompted by commercial interests. In preparing for this litigation, in order to be able to demonstrate the danger of such nursing-bottles and the justification for suppressing them, the department of health has resorted to a series of microscopical, bacteriological and chemical investigations, which have revealed innumerable bacteria of varied morphology.

SOME OBSERVATIONS FROM PRACTICAL EXPERIENCE WITH BOVINE TUBERCULOSIS IN NEW HAMPSHIRE.

This paper was read by DR. IRVING A. WATSON of Concord, N. H. He gave a brief history of the official recognition of bovine tuberculosis in New Hampshire, and presented the following deductions: (1) That it is impossible to eradicate bovine tuberculosis, but that it may, without inflicting too great a burden upon the State be reduced to a degree that will subserve the interests of the stock raisers, and likewise protect the public health. (2) That but a very small percentage of animals infected with tuberculosis in any way endanger the public health, and that the indiscriminate slaughter of the cattle reacting to the tuberculin test is wholly unnecessary, inasmuch as many of them either recover or the disease is permanently arrested. (3) That a proper sanitary condition of stables and stable enclosures would do more toward preventing the spread of bovine tuberculosis than any other measure that can be adopted. (4) That the danger of infection from this disease may be reduced to very small proportions if not wholly eradicated by sanitary measures, inspections, and physical examinations by the State in cooperation with local authorities. (5) That such inspections, once inaugurated, can be maintained without an expense that would be burdensome to the State.

REPORT OF THE COMMITTEE ON DEMOGRAPHY AND STATISICS IN THEIR SANITARY RELATIONS.

The first part of this report, which was read by the Chairman, DR. WILBURM of Michigan, recommended the adoption of the Bertillon system of classification of causes of death, in accordance with the resolutions previously offered and adopted. Reliable and thoroughly comparable mortality statistics are absolutely essential for the use of sanitarians, and deductions based upon them are recognized as being of the greatest practical importance in public-health work. The formation of a plan of international union of the countries using this system occupied a considerable part of the report. The plan provides for consultations of pathologists, sanitarians, and all persons making use of mortality statistics, as well as the registration offices.

The system of classification and plan of revision were adopted by the Association, and the members of the National Commission for the countries represented were appointed.

LEPROSY IN MINNESOTA.

DR. H. M. BRAKEN of Minneapolis, read this paper, in which he called attention to the following facts as emphasized by the records:

1. The impression that leprosy immigrants from the Scandinavian peninsula are all from Norway is a wrong one, as five of eleven lepers whose cases were placed on file by the board during 1897 and 1898 were from Sweden.

2. The feeling that physicians can quarantine against lepers by watching immigrants is an unsafe one. The family history of all immigrants from the country where leprosy prevails should be secured before they are allowed to embark for America, and no member of a leprous family should be permitted to land on our shores.

3. It would appear that the conditions antagonistic to the spread of leprosy in Minnesota are also opposed to sterility, as borne out by the families of several lepers, some of these having had many children.

4. It is quite possible for leprosy to die out in certain favored sections of the country, such as Minnesota, without segregation, provided the importation of lepers is discontinued.

5. Even in Minnesota one has but to visit some of these lepers to feel that segregation should be insisted upon in all cases. One cannot but feel, on entering a filthy home and seeing a leprous mother careless in her habits, that the children are not safe.

6. Segregation in single States is not practicable. It tends simply to drive lepers from States enforcing such a practice to those that are not carrying out the system.

7. A Federal home should be provided for these un-

fortunates. They could thus be cared for more economically and more satisfactorily than through any State provision.

8. In spite of all precautions taken, there will be some leprous individuals in this part of the world for many years to come. The Scandinavian peninsula does not furnish all leprous individuals found in the United States.

Two papers were presented on

FLIES, FROM A HYGIENIC STANDPOINT.

Abundant evidence was adduced to show that diptera are active agents in the spread of epidemics and of contagion. They are also known to be important causative factors in the spread of typhoid fever and dysenteric diseases.

In the transaction of its routine business the Association elected sixty-six applicants to membership, the majority of whom were from Ottawa.

DR. C. L. WILBUR of Lansing, Mich., offered resolutions, which were adopted, recommending that a plan be incorporated in the act to provide for the taking of the next United States census whereby reliable vital statistics may be secured for the non-registration States. The Association recommended the Bertillon classification of causes of death, and urged that it be adopted by all registrars of vital statistics in the United States, Canada, and Mexico as soon as the change from the systems now in use can be conveniently made.

The following resolutions were offered, referred to the Executive Committee, and subsequently adopted by the Association:

By DR. GEO. H. ROHE:

Resolved, That the Committee on Public-Health Legislation be continued; that it be authorized and requested to proceed along the lines of work already begun; that the Association reaffirms its endorsement of the creation of a National Department of Public Health.

By DR. A. L. GIHON:

Resolved, That a committee of seven be appointed by the Chair to wait upon the President of the United States with a view of obtaining a bacteriological commission to go to Havana to study the cause and prevention of yellow fever.

By DR. A. WALTER SUITER:

Resolved, That this Association recommends that public-health authorities in general exercise every possible means to effect the complete discontinuance of the use of the so-called long-tube nursing-bottle, which is so largely a contributing factor in infant mortality.

By DR. U. O. B. WINGATE:

Resolved, That a committee of five be appointed by the Chair for the purpose of drafting and presenting to this Association for adoption a definition of the term "epidemic" for the guidance of health authorities in executing such laws as call for the declaration of the presence of an epidemic.

By DR. HENRY B. HORLBECK:

Resolved, That the Association call the attention of the Government of the United States to the presence of leprosy in this country. This Association would urge upon the United States Government the necessity of establishing a leper home or colony, similar to such institutions as now exist in Canada and Mexico, where such persons can be segregated, and in this manner the general public may be protected, and, at the same time, these sufferers be afforded a proper home and medical care.

The following officers were elected for the ensuing year: President, Dr. George H. Rohe, Sykesville, Md.; first vice-president, Dr. Henry Mitchell, Asbury Park, N. J.; second vice-president, Dr. J. E. Monjaras, San Luis Potosi, Mexico; secretary, Dr. C. O. Probst, Columbus, Ohio; treasurer, Dr. Henry D. Holton, Brattleboro, Vt.

Minneapolis was selected as the place for holding the next meeting, the time of which will be in November, 1899.

REVIEWS.

GUIDE TO THE CLINICAL EXAMINATION AND TREATMENT OF SICK CHILDREN. By JOHN THOMSON, M.D., F.R.C.P., Extra Physician to the Royal Hospital for Sick Children, and Lecturer on the Diseases of Children in the School of Medicine of the Royal Colleges, Edinburgh. Illustrated. Philadelphia and New York: Lea Brothers & Co., 1898.

THE object of this work, as stated in the preface, is to "supply to practitioners and senior students practical and useful information, which taken along with that contained in a text-book on practice of medicine, will be a help to them in the study and treatment of sick children." This idea is faithfully carried out, and the book will be welcome to a large class of readers. The larger amount of space is devoted to the examination of sick children. This part is full of valuable information, and contains many practical hints. Everywhere there is evidence of the close observation of the author. After this follow some chapters on the diseases peculiar to, or peculiar in, infancy.

The discussion of the diagnostic points of hereditary syphilis, of idiocy, and cretinism are especially worthy of perusal. We miss a consideration of some of the more common diseases of the new born. There are very good chapters on infant-feeding, the dosage of drugs, and therapeutic methods. The articles on gavage and lavage are very complete. The volume ends with a discussion of food disorders.

The language of the text is very clear, and the book is freely illustrated with reproductions of photographs which show clearly the desired points.

LECTURES ON TUMORS. By JOHN B. HAMILTON, M.D., LL.D., Professor of Surgery, Rush Medical College and Chicago Polyclinic; Surgeon to Presbyterian Hospital; Consulting Surgeon to St. Joseph's Hospital, etc., Chicago. Third edition. Philadelphia: P. Blakiston's Son & Co., 1898.

IT is a surprise to us that a book of this kind should have reached its third edition, for we cannot understand the necessity of its existence or the demand for its sale.

The book comprises a series of lectures to students on the subject of tumors, giving the symptomatology and treatment of each variety, and mentioning in detail the clinical history of several interesting cases, many being well known in literature, and some being personal observations of the author. The entire book is written in the free and easy lecture-room style, and to those interested in the general subject of tumors and familiar with them, may prove of some interest, particularly as to the clinical pictures described. But as a work dealing with tumors in a scientific manner, and as a work of reference it can hardly be recommended as a guide for the student.

ELEMENTS OF HISTOLOGY. By E. KLEIN, M.D., F.R.S., Lecturer on General Anatomy and Physiology, and J. S. EDKINS, M.A., M.B., Joint Lecturer and Demonstrator of Physiology in the Medical School of St. Bartholomew's Hospital, London. Revised and enlarged edition. Philadelphia and New York: Lea Brothers & Co., 1898.

KLEIN'S "HISTOLOGY" is too well known to teachers and students to require any special introduction, and it would be superfluous to review it *in extenso*. The work has now passed through five editions, and the present volume brings the subject well up to date. Many of the chapters have been carefully revised, and that upon the central nervous system has received particular attention. We are acquainted with no small work in English that deals with the subject in a more clear and comprehensive manner or that satisfies the needs of the student to better advantage. More advanced workers will even find it useful in some instances as a book of reference.

Many new illustrations have been added, and the glazed paper upon which the book is printed is a decided improvement over the early editions. Altogether the work can be highly recommended, and we congratulate the authors and publishers in giving us a book so well equipped to satisfy the requirements of all students.

MEDICAL DISEASES OF INFANCY AND CHILDHOOD. By DAWSON WILLIAMS, M.D., Physician to the East London Hospital for Children. With eighteen illustrations. Philadelphia and New York: Lea Brothers & Co., 1898.

THIS treatise is a good, short exposition of our present knowledge of the medical diseases of children. The descriptions of symptoms are quite full, and the treatment recommended will meet general approval. The accounts of rubella, tuberculosis, infective arthritis, acute thyroiditis, congenital laryngeal stridor, and constipation are excellent. The bacteriology of the infectious diseases is not well detailed. Bacilli are mentioned as probably causing measles and smallpox, but neither the Koplik-Czaplewski bacillus of pertussis, the diplococcus of parotitis nor the intracellular diplococcus of meningitis is mentioned. Under rubella there is an interesting account of supposed cases without the rash. The consideration of the treatment of laryngeal diphtheria is very incomplete.

The physical signs of pulmonary disease in children are very well described. The gastro-intestinal diseases "are classified according to clinical features"; but the order which is followed is curious. The diseases are, however, very well pictured, and the article is illustrated by Baginsky's photomicrographs. The pathology of renal diseases is not clearly given. The chapters on nervous diseases are very instructive, especially those on functional disturbances. The defects in the book are very few, and it will be of great service to those entering upon the study of pediatrics.

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. By W. S. PLAYFAIR, M.D., LL.D., F.R.C.P., Emeritus Professor of Obstetric Medicine in King's College, London. Seventh American, from the ninth English, edition. Philadelphia and New York: Lea Brothers & Co., 1898.

THE old student of Playfair's "Midwifery" will find much of his favorite reading matter missing and much that is new and strange in this volume. The eminent author has, to use his own words, "endeavored to celebrate the fact of his work having attained its majority by a very thorough revision of the text," the first edition having been published twenty-two years ago.

It is impossible to record all the changes that have been made. Especially noteworthy are the chapters on conception and generation and the anatomy of the fetus, which have been rewritten in harmony with modern embryologic thought. The chapters on diseases of pregnancy have been made consistent with the pathologic knowledge of to-day and the treatment of difficult positions is in accord with the latest accepted teachings. The use of the forceps is admirably discussed and promulgates the author's well-known scientific views. Saline infusion is not given that prominence or preference to blood transfusion, which, in our opinion, its merits deserve. The question of infant-feeding is treated more scientifically than in earlier editions.

With these few notes the reviewer directs attention to this old classic among works on obstetrics, now in new form and new dress, and feels that it is destined to remain, as it long has been, the favorite among books of its kind.

THERAPEUTIC HINTS.

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M. Sig. External use. To be applied with friction three times a day.

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